THE

CHICAGO MEDICAL

JOURNAL & EXAMINER.

VOL. XLIV.—MARCH, 1882.—No. 3.

Original Lectures.

ARTICLE I.

DIPHTHERIA: ITS HISTORY, CAUSES, SYMPTOMS, PROGNOSIS, TREATMENT AND SEQUELÆ. A Lecture in the regular course on Practical Medicine, in the Chicago Medical College (the reporter's manuscript carefully revised by the author), by N. S. DAVIS, Prof. Principles and Practice of Medicine, February, 1882.

GENTLEMEN: The word diphtheria, as used to designate a particular form of disease, is of recent origin, having been first applied to that purpose by Bretonneau in a valuable paper laid before the French Academy of Medicine, in 1821. While the name is thus modern, the disease has been recognized and described, with varying degrees of accuracy, from a very early period in medical history. The Grecian writers alleged that the disease originated in Egypt, and called it "*Malum Egypticum*," in the days of Homer and Hippocrates. An epidemic of the disease in Rome was recognized and described by Macrobius in the year 380, A. D. From that time to the middle of the six-

teenth century, I find but few allusions to the disease. At the latter date, 1557, it appeared in Holland as an epidemic; in Germany, in 1650; in France and Italy, in 1749; and in England, from 1760 to 1769. While the descriptions of all these earlier epidemics are sufficiently accurate to render it certain that the writers were, for the most part, describing the disease now called diphtheria, it is equally evident that they often confounded it with scarlet fever and various forms of sore throat. Perhaps the most accurate of the early records is, "An Account of the Putrid Sore Throat," as it prevailed in London, by Dr. John Fothergill, published in 1769. The earliest account we have of this disease in America was written by Dr. Douglass, of the Massachusetts Colony, in 1736. It undoubtedly prevailed in New York in 1771, and was pretty clearly described by Dr. Samuel Bard. From that time to 1831 we find nothing in the medical literature of our country which could be regarded as applying to true diphtheria, although it was more or less prevalent on the continent of Europe, and was being carefully investigated by Bretonneau, at Tours, from 1818 to 1821.

Dr. John Bell, of Philadelphia, alludes to the prevalence of an epidemic sore throat in that city in 1831, which was evidently true diphtheria. In 1856 the disease prevailed with great severity in San Francisco and the adjacent counties in California, and during the next two or three years epidemics appeared in various parts of New England, New York, and a large number of the Middle and Western States. According to Dr. L. N. Beardsley, of Milford, Connecticut, the disease commenced in the adjoining town of Orange, among the scholars attending a select school, and with such severity that "fourteen cases out of fifteen, of those who were first attacked, proved fatal." In April, 1858, it made its appearance in Albany, N. Y., and caused 167 deaths during the next eight months. The disease began to attract attention in this city in 1858, and prevailed with considerable severity for three or four successive years.

During the same period of time, it showed itself more or less prevalent in almost every inhabited district of country from the Atlantic to the Pacific Ocean, and from the Lakes to the Gulf of Mexico. It prevailed in localities the most diverse in all

their local conditions. Elevated, dry, thinly populated rural districts were visited as freely, and often as fatally, as the lowest alluvial valleys, or the most densely populated cities. It presented every gradation of severity, from fifteen deaths in sixteen attacks, as reported by Dr. Beardsley, of Connecticut, to only four deaths in one hundred and thirty-three attacks, as reported by Dr. Wm. L. Wells, of Milwaukee, Wis. For additional facts regarding the prevalence of this disease during the years intervening between 1858 and 1860, and earlier, I refer you to an interesting report on the topography and epidemics of New York, by Dr. Joseph M. Smith, in the Transactions of the American Medical Association, Vol. xiii, p. 251, 1860. From that period to the present it is not probable that the disease has been entirely absent from all parts of the country for a single year. We find it occupying a place of more or less prominence in nearly all the annual tables of mortality in our cities, and accounts of its prevalence in some of the country districts have come to us every year. It seldom prevails in the same rural district more than two or three years in succession, without a period of exemption. And in the larger cities it presents its distinct waves of increase and decrease. For instance, in Philadelphia the number of deaths from diphtheria each year for eight successive years was, in 1872, 141; 1873, 106; 1874, 181; 1875, 656; 1876, 708; 1877, 458; 1878, 464; 1879, 321. In this city (Chicago) and in New York, the statistics of mortality indicate the same wave of increase in 1875, culminating in 1876, and receding through 1877–78–79.

Causes.—The predisposing causes or circumstances that appear to favor diphtheria are, childhood and youth; dampness, with frequent changes in the thermometric conditions of the atmosphere; overcrowding of houses and consequent lack of ventilation; the presence of the products of the decomposition of organic matter, whether animal or vegetable; and the want of attention to personal cleanliness and domestic hygiene.

While it is true that, during the epidemic prevalence of diphtheria, persons have been attacked at all periods of life, from infancy to ripe old age, very much the larger number of cases occur in childhood. Of the 133 cases reported by Dr. Wells,

107 were in children and 26 in adults. Of the latter, one was 63 years of age; while the great majority of the former were between the ages of two and ten years. Dr. Willard, of Albany, in giving an account of an epidemic in that city, reports 179 deaths, of which only *three* were adults, all the remainder being children, most of whom were under twelve years of age. From the statistics of the severe epidemic prevalence of this disease in England from 1857 to 1860, it would appear that more than 85 per cent. of all the deaths were of children under the age of fifteen years. It is probable that seventy-five per cent. of all the cases of diphtheria occur in childhood under twelve years of age. And as one attack of the disease does not destroy the susceptibility of the system to subsequent ones, there must be something in the conditions of childhood that acts the part of a predisposing influence.

While isolated cases of diphtheria occur in particular houses or circumscribed localities at all seasons of the year, and epidemics have occurred in all varieties of climate, yet it remains true that the disease, especially in epidemic forms, prevails much the most frequently and severely within the temperate zone, and during the spring and autumn months, when atmospheric conditions are most variable. That overcrowding of the population, as in the tenement houses in our cities, with neglect of ventilation, and the accumulation of vegetable and animal matter from want of sewerage and cleanliness, act as strongly predisposing influences, is abundantly shown by the behavior of the disease in all our large cities during its special periods of prevalence from 1856 to 1860, from 1864 to 1867, and from 1875 to the present time. For instance, in New York City, during the three months ending September 30, 1881, the whole number of deaths from diphtheria was 545; of which 405 took place in tenement houses, leaving 140 to occur in all other dwellings. During the last five months of the year 1877, there were reported to the health officer of this city (Chicago), 162 deaths from diphtheria, occurring in 122 dwellings. The health officer caused each of these houses to be very thoroughly examined by an expert plumber and sewer builder, whose report showed 13 of these houses to be in excellent sanitary condition in every respect; 14

faulty from insufficient ventilation only; 19 from insufficient ventilation and uncleanliness; 24 from insufficient ventilation and uncleanliness, both of persons and premises; and 52 from defective sewerage and plumbing.

Facts of similar import may be gathered in connection with the prevalence of the disease in all large cities; and they justify the conclusion that in such aggregations of population, those persons and families who live in poorly ventilated, uncleanly, and imperfectly sewered houses and premises, yield a larger proportion of victims of diphtheria, than those in good sanitary surroundings. But, as I have already pointed out to you in previous lectures, this conclusion is equally, or even more, applicable to the prevalence of typhoid, typhus, and all other acute general febrile affections of kindred type. And, consequently, the only legitimate deduction from the facts is, that the diminished power of vital resistance from impaired tone of health caused by living in bad sanitary conditions, causes a more ready yielding to the influence of the essential cause or causes of diphtheria.

On the other hand, in villages and country districts, the disease has prevailed in its epidemic form with as much severity and fatality, in proportion to the population, as in the most densely populated cities, and in such districts it has shown little or no preference for the poor or uncleanly, but has invaded dwellings kept in the most perfect sanitary condition, and rural districts usually deemed most healthy. For instance, Dr. William C. Wey, of Elmira, N. Y., after carefully noting the rise, progress and decline of an unusual prevalence of diphtheria in that place during the years 1877–78–79–80, says: "In the epidemic which has so severely visited Elmira, the questions of filth and water-supply from unclean sources, as means of inducing and spreading the disease, have been carefully considered. In some cases the water supply has been found corrupted; in many the general surroundings have been unsanitary, and the facilities and comforts of the sick and attendants limited and unsatisfactory. As a matter of course, great mortality has followed in the train of neglect and poverty. In other cases the water supply has come from pure sources, the sanitary conditions of the people and their manner of living has been faultless, the

utmost watchfulness has been exercised to maintain rigid non-intercourse with seats of the disease, and yet, in spite of care, and as if in defiance of it, the affection has appeared with as much malignity as in places of human crowding and disregard of sanitary precautions."

These are the statements of one of the most experienced and intelligent practitioners in that State. To precisely the same import are the facts given by Dr. N. B. Bailey, of Brewster, Putnam County, N. Y., in an account of an epidemic of diphtheria that prevailed in that place during the years 1877–78, published in the same volume of Transactions from which I have just quoted. My own personal observations lead to the same conclusions. I have met with the disease here, in this city, in all grades of severity, among both rich and poor, in the stateliest mansions of luxury, and in the most narrow, dark, damp and uncleanly hovels of poverty and vice. It has visited, from time to time, almost every county in this and neighboring States, and has proved as malignant and fatal, in proportion to the population, on the open plains, and thinly populated, healthy, rural districts in Northern Illinois, Wisconsin and Minnesota, as in the most unsanitary wards in the city of Chicago. At most, therefore, bad sanitary conditions can only be regarded as predisposing influences, and we must look in other directions for the efficient cause or causes on which the disease depends.

Many of the most eminent observers and writers of the present time represent the essential cause of the disease to be a specific contagium vivum, or organic germ, which has been shown to exist abundantly in the diphtheritic exudation or membrane, and in the epithelial layer of the membrane lining the fauces and other parts affected by the local manifestations of disease. By some, this organic germ is claimed to be the "Oidium Albicans," a fungus, consisting of sporules or micrococci and mycelium. In 1868, Buhl, Hueter, and Oertel discovered in the diphtheritic membranous formations, and in the mucous membrane covered by them, various species of bacteria, the most important of which were an exceedingly minute spherical variety, called by Cohn micrococcus, and the bacteria termo, or rod-shaped bacteria. By Oertel, and many others, these minute organisms are regarded as

the essential cause of the diphtheritic disease, and they claim to have produced well characterized diphtheria in animals by inoculation with portions of the membrane from the fauces.

On the other hand, the results of the experiments of Burdon-Sanderson with filtered liquids; the failure of Trousseau and Peter to induce the disease in themselves by the very free application of the membranous substance to their own fauces; and the entire failure of Curtis and Satterthwaite, and W. C. Wood and Formad, to induce the disease in animals by repeated and carefully executed inoculations with diphtheritic matter, go far to disprove the conclusions of Oertel and his followers. And if we add to these the further fact that every variety of germs found either in the membranous exudations of diphtheria, or in the blood and tissues of diphtheritic patients, have also been found in the miguet or curdy exudations upon the mucous membrane of the mouth and fauces in young children, in the white exudations upon the tonsils in the last stages of consumption and other wasting diseases, and in the exudations that sometimes appear on different parts of the mucous membrane in typhoid, typhus, and other low forms of fever, we shall find it much more in accordance with sound principles of reasoning to conclude that these minute organic forms, called bacteria, micrococci, etc., are simply accompaniments, if not products, of certain degenerative organic processes that take place, to a greater or less extent, in all the acute febrile and inflammatory affections of an asthenic type. If we adhere impartially to well ascertained facts, we must admit that diphtheria often makes its appearance in families, asylums and schools, as well as at the beginning of epidemics, under such circumstances that it is impossible to trace it to any form of communication with previous cases, either in the same localities or elsewhere. In other words, it is capable of spontaneous development, and consequently does not depend for its production and spread upon any specific contagious germs or virus generated in the bodies of the sick. I have seen many cases illustrative of this fact; and the same is strikingly exemplified by the outbreak of the disease in Brewster, N. Y., as described by Dr. Bayley, in 1878.

The same adherence to simple facts, however, compels us to

admit that in very many cases the disease appears to spread by an infection capable of contaminating clothes and furniture, and of being carried by them from family to family, and from one locality to another. Oertel recognizes both these series of facts, and claims that when it develops spontaneously, it is from some organic *miasm;* and hence he includes diphtheria in his class of "miasmatic contagious diseases." The fact that this disease usually prevails as an epidemic, commencing often without any traceable communication with previous cases or known contagious influence, and attacking, simultaneously, members of families in different parts of a city, village or rural district, who have neither had any communication with each other nor with any known common source of infection, would indicate that its essential cause consists in some special condition of the atmosphere, which the older writers called an epidemic constitution. Its nature will remain unknown until more systematic and continuous observations are made and recorded, concerning all appreciable conditions of the atmosphere in direct connection with records of the prevalence of acute general diseases. When this is done through a series of years, with the accuracy now attainable by the aid of physics, chemistry and microscopy, we shall have such elements for comparison as will throw light upon this and many other obscure questions connected with the etiology of diseases.

Symptoms.—For the clinical study of diphtheria I shall group the various cases met with under three heads—namely: the simple, the croupous, and malignant. In the first group I shall include all the cases that present so moderate a degree of severity as to pass through their successive stages with a natural tendency to convalescence. In the second group I shall include all those cases in which the local inflammation invades the larynx and trachea. In the third group will be included all such cases as, by the gravity of the general morbid conditions, or the severity of the naso-pharyngeal and glandular inflammations, tend strongly toward a fatal result. The majority of cases of simple diphtheria are developed gradually; the patient feeling for one, two or three days a gradually increasing sense of weariness; indisposition to mental or physical activity; vague or ill-defined pains in the head, back and limbs; with indifference to food. Then the face

becomes a little flushed, the lips dry, the expression of countenance dull, the pulse moderately accelerated, with an increase of one or two degrees of temperature, and a more decided sense of weakness; and, in addition to these symptoms of a moderate general fever, there is observable a little undue fullness behind and beneath the angle of the jaw, with some feeling of stiffness and soreness in swallowing. On examining the fauces at this stage, you will find the mucous membrane covering the tonsils, arch of the palate, and portions of the pharynx, presenting a tumefied and dark red appearance, with some spots of white, or yellowish white, membranous exudation closely adhering to it, together with some degree of swelling of the tonsils and neighboring lymphatic glands.

In a smaller number of the cases belonging to this group, the attack is more abrupt, and accompanied by chilliness, or even a decided chill, followed by a more active general fever, but the same local symptoms just described. The symptoms thus begun usually gradually increase during the succeeding three or four days. The patches of membrane on the inflamed surface of the fauces increase in number and size, until, in many cases, they coalesce and cover nearly the whole surface, and extend with the inflammation into the pos erior nares. During the same time the tonsils and lymphatic glands also increase in size, impeding the free opening of the mouth, and rendering deglutition more difficult. The fauces also become troubled with an excess of tenacious mucus, which in young children often causes much rattling in the throat and some cough. The urinary secretion is moderately diminished, and in a small proportion of cases contains some albumen, and the bowels usually remain quiet, unless disturbed by laxative medicine.

This class of cases usually reach the climax of activity, in both general and local symptoms, in from three to five days after the first development of local symptoms. The swelling of the glands of the neck and parts within the fauces ceases to increase; the membranous exudation soon appears more yellow and shows signs of loosening or disintegration; the saliva or mucus in the mouth and fauces becomes more opaque, more easily dislodged, the breath more offensive, and generally some discharge from the

nostrils. While these local changes are taking place, the general febrile symptoms also diminish; and in the mildest variety of cases, by the end of the first week, the temperature has returned to the natural standard, the pulse becomes soft and weak, but natural in frequency; the cutaneous and urinary secretions natural, and the membranous exudation and swelling, both in the fauces and lymphatic glands, disappear, leaving the patient fairly convalescent, yet much debilitated. In the more severe cases belonging to the first group, the morbid phenomena reach their climax in the same length of time, and the same subsequent changes take place, but the subsidence of the glandular swellings and the disintegration of the membranous exudations progress slower, and are accompanied by more copious and troublesome discharges from the mouth and nostrils, and greater offensiveness of the breath. The patient also exhibits more dullness, with paroxysms of restlessness, especially when the fauces and nostrils become obstructed by the mucous or muco-purulent discharge, as is apt to be the case in infants and young children. The pulse becomes more weak, the bodily temperature returns more slowly to the natural standard, although the skin and extremities may even feel unduly cold, and the patient is longer troubled with difficulty of deglutition, and more tendency of food and drink to regurgitate through the nostrils. Yet, in nearly all of these cases, the disease completes its course, and convalescence is established by the middle or latter part of the second week. In some, however, the breaking up and disappearance of the false membrane is accompanied and followed by superficial ulcerations in the tonsils and other parts of the throat; and, in a smaller number, one or more of the inflamed lymphatic glands suppurate, forming abscesses in the neck. These occurrences may postpone the establishment of convalescence until some time during the third week from the commencement of the attack.

The second group of cases, including all those in which the diphtheritic inflammation invades the larynx, will be presented to you under two aspects: one, in which the inflammation enters the larynx apparently by extension from the pharynx, and generally manifests itself first between the fourth and seventh days after the commencement of the disease, or even after convales-

cence has fairly commenced; the other, in which the inflammation attacks the larynx primarily, giving rise to hoarseness of voice, stridulous breathing and croupal cough, from the beginning of the patient's sickness. In both, the general symptoms are the same as in ordinary diphtheria.

In all the cases in which the local disease develops in the larynx by extension from above downward, and does not commence until several days after the beginning of the general diphtheritic disease, there can be no difficulty in making the diagnosis. But when the larynx is invaded coincidently with the beginning of the sickness, there is often much difficulty in keeping a clear line of distinction between the diphtheritic disease and the ordinary sporadic pseudo-membranous laryngitis. And many writers of the present day regard them as identical, and do not attempt to distinguish the one from the other. In all the cases that have come under my observation, however, the diphtheritic laryngitis has been accompanied by some redness and swelling of the tonsils and other glands in the neck; a soft, weak pulse; more dullness of expression, and earlier symptoms of exhaustion. In all these cases the inflammation in the larynx is accompanied by a rapidly increasing exudation, which solidifies into a thick, firm layer of false membrane over all the interior of the larynx, the cartilages at the opening of the glottis, and often downward through the trachea and into the larger bronchial tubes. The voice becomes early suppressed, the cough rough, stridulous and suffocative; the breathing difficult, and accompanied by a tight, wheezing sound in the neck at first, but subsequently accompanied by mucous rattle. To these local symptoms of direct obstruction in the larynx, there is added a soft, quick, weak pulse, somewhat purplish or leaden color of the lips, and fullness or bloating of the face; coolness of the extremities, with moderate increase of temperature in the head and trunk of the body; drowsiness, with temporary paroxysms of restlessness and tossing; often difficulty of deglutition, and scantiness of urine. In very severe cases, the dyspnœa and rattling in the throat and larynx increases every hour, with frequent paroxysms of choking, strangling cough, during which more or less of a thick, ropy mucus is forced out, containing shreds of the false membrane;

after which, for a brief time, the breathing is easier. But the obstruction soon accumulates again, causing the sense of suffocation and struggling for breath to be renewed, until the imperfect oxygenation and decarbonization of the blood render it no longer capable of sustaining the sensibility of the brain and nervous centers, when the patient becomes somnolent or stupid, the breathing frequent, very difficult, and accompanied by coarse mucous rattling in the air passages; blueness of the lips; coldness and blueness of the extremities; a small and very weak pulse; and finally, relaxation of the sphincters, a general clammy sweat, and death from asphyxia. The fatal result is reached in some of these cases in five or six hours; in a much larger number, however, it is deferred from two to five days. If the tumefaction of the parts within the larynx and the membranous formations are not sufficient to destroy life in from three to five days, the latter begin to loosen and disintegrate, and in the paroxysms of coughing more shreds and patches of the membrane are dislodged and thrown out with a more opaque, muco-purulent expectoration.

The tightness and constriction in the breathing diminishes; the color of the skin and expression of countenance improve; the pulse becomes slower; the mind more active; and in three days, or from seven to nine from the commencement of the laryngeal trouble, all bad symptoms have disappeared, leaving the patient convalescent, but much debilitated. In some cases of diphtheritic laryngitis, the membrane is detached and thrown out, in the severe paroxysms of coughing, in large pieces, presenting, when inflated, more or less of a complete model of the interior of the larynx. Many years since I saw a case in consultation with my colleague, Dr. Hollister, in which the patient, a boy aged seven years, in a violent paroxysm of coughing, expelled a perfect tubular cast of the larynx and trachea, measuring seven inches in length to the bifurcation, and extending beyond to the primary division of the bronchial tubes, having thirteen divisions on one side and eleven on the other. The expulsion was followed by a great degree of immediate relief; but, as frequently happens, the relief was only temporary. Fresh exudations took place on the inflamed membrane, and, extending lower into the

bronchial tubes, renewed the dyspnœa, and proved fatal before the end of the next twenty-four hours.

In the third, or malignant group of cases, the onset of the attack is generally abrupt, and attended by appearances of a chill or cold stage, which is followed by a more rapid rise of temperature of the body; a more rapid development of inflammation and swelling, both in the fauces and glands of the neck, often causing in a very few hours great difficulty of deglutition, inability to open the mouth widely, and the speedy formation of a thick, tough, yellowish membrane over the whole arch of the palate, tonsils and pharynx. The pulse is frequent, soft and weak; breathing noisy from the existence of tenacious mucus in the throat and nostrils, and more frequent than natural; the expression of countenance dull, with a dark or purplish flush; extremities often cool, with leaden color under the nails; urine scanty, and often containing some albumen; and the mind inclined to drowsiness, except in momentary paroxysms of restless tossing, or of efforts to clear the mucus from the throat. Sometimes the attacks of this variety are so severe, and the tumefaction of the tissues within and behind the angle of the jaw so great, that the blood is obstructed in its return from the brain, causing stupor, inability to swallow, extreme frequency and feebleness of pulse, and death in from twelve to eighteen hours after the beginning of the attack. In other cases, the obstruction to the cerebral circulation is less, and life is prolonged from one to five days. In such, during the second day, the inflammation and exudation extend into the nostrils posteriorly, and sometimes into the Eustachian tubes, and even into the middle ear. During the third and fourth days the false membranes begin to disintegrate, the mucus in the fauces and nostrils becomes more abundant, more opaque or muco-purulent, decidedly offensive, and gives occasion to much noise and difficulty of breathing. The inflamed mucous membrane also shows commencing ulceration, and in many cases gangrene. The patient loses strength rapidly, and usually dies from complete exhaustion before the end of the fifth day.

I have now given you a summary of the more important symptoms of the different grades of diphtheria. You observe that it is a disease varying greatly in its degree of severity in different

seasons, and in different cases the same season. So true is this, that I have in some years attended a large number of cases with less than two per cent. of deaths; while in other years, with no greater numbers, the proportion of croupal and malignant cases was so great that the deaths averaged from ten to fifteen per cent. It is not rare that, in the more severe epidemics of this disease, all the children in a family are destroyed within a few days. I remember being called to visit, in consultation, a Scandinavian family in the northwestern part of the city, where I found three children lying side by side on the same table, dressed for burial, and a fourth one dying, leaving only the nursing infant in its mother's arms.

Thus far I have spoken of the diphtheritic membranous exudations as appearing only in the throat and parts in immediate connection with it. The same, however, may attack the vagina and vulva, the lips, the wing of the nose, the conjunctiva of the eye, and any sore or raw surface in any part of the body. I saw one well-marked case, in which a thick layer of false membrane covered one-third of the upper lip, accompanied by considerable tumefaction; and another in which a lady, recovering from an extirpation of a cancerous tumor from one breast, while there was still a healthy granulating surface unhealed, was attacked with the ordinary general symptoms of diphtheria, accompanied with a moderate degree of inflammation and exudation in the fauces. Simultaneously with the appearance of the latter, the uncicatrized surface on the breast became completely covered with a thick layer of false membrane, which remained about three days, and as it disintegrated and disappeared, it was accompanied by an abundant sero-purulent and offensive discharge, with a complete destruction of all the previously healthy granulations. After the diphtheritic disease had disappeared, the raw surface on the breast gradually resumed a healthy appearance, and subsequently progressed to complete cicatrization.

Diagnosis.—From catarrhal sore throat, diphtheria is distinguished by the character of the general fever; the coincident inflammation of the mucous membrane of the fauces and tonsils, with tumefaction of some of the lymphatic glands near the angle of the jaws; and still more by the appearance of more or less

diphtheritic exudation on some part of the inflamed structures. The diagnostic differences between diphtheria and ordinary sporadic croup or active pseudo-membranous laryngitis, I pointed out when giving the symptoms of the croupous variety of diphtheria, and need not repeat them. From scarlet fever, diphtheria is distinguished by the much less sudden and severe onset of the fever, the presence of diphtheritic membranous exudations, and the absence, generally, of any exanthematous eruption upon the skin. In some epidemics of diphtheria quite a proportion of the cases will be accompanied by a moderate amount of a fine red exanthematous rash, causing the surface to much resemble mild cases of scarlet fever. But the milder grade of general fever, and the coincident existence of white patches of diphtheritic membrane in the fauces, will usually enable the practitioner to keep the diagnosis correct. It has undoubtedly happened, however, when both these general febrile diseases were prevailing in the same community, that they have manifested a disposition to commingle the characteristic symptoms of both in the same patient, thereby causing doubt and sometimes controversy concerning the diagnosis. It is more proper to regard such cases as presenting the combined or simultaneous presence of the causes of both diseases, in the same manner as we recognize the coincident action of the causes of typhoid and periodical fevers, producing what has been styled typho-malarial fever.

Prognosis.—The prognosis has been pretty fully indicated by the clinical history I have just detailed to you. All the milder cases tend toward spontaneous recovery in from seven to fourteen days. The more malignant and the croupous groups of cases manifest a strong tendency to end in the death of the patient, and are always productive of a high ratio of mortality.

Pathology.—I regard diphtheria as a general febrile affection, arising from some cause or combination of causes by which the properties of the blood and of the organized structures are so changed as to render the fibrin more disposed to solidify or coagulate than natural, and to lessen the tone and contractibility of the muscular structures, with special tendency to develop asthenic inflammation of greater or less severity in the mucous membrane of the throat and adjacent lymphatic glands. That the general

disease is one of a typhoid or adynamic character, and the local inflammations asthenic, is proved by the generally soft, compressible pulse, universal muscular weakness, liability to syncope from moderate exertion, and the aplastic character of all exudations. By the latter I mean the uniform tendency of all the membranous exudations, however thick or tough they may be, to undergo degeneration and dissolution, never taking on permanent organization or becoming a bond of union by adhesively uniting surfaces that may be in contact with each other. This view is further corroborated by the frequent occurrence of muscular paralysis as a sequel of the disease.

Treatment.—From these views of the pathology of diphtheria I deduce four well defined, rational indications to be fulfilled by treatment: First, to arrest the further infection and deterioration of the blood. Second, to improve the general tonicity of the tissues by increasing the vital affinity. Third, to sustain the nutritive and excretory functions as near their natural condition as possible. Fourth, to mitigate the violence of such local inflammations as may exist in each individual case. To fulfill the first of these indications, the chief reliance has been placed on the internal use of chlorine, bromide, iodine and their salts, such as the chlorates of potassium and sodium; and to this have been added more recently, the sulphurous acid and the sulphites of sodium and calcium, the benzoate of sodium, the sulpho-carbolate of sodium, and the permanganate of potassium. Of these, I think the aqueous solution of iodine, the chlorate of potassium and the benzoate of sodium are the most important. To fulfill the second indications, I rely principally upon a judicious use of quinia, iron, strychnia, pure air and nourishment; even when temporary stimulants are needed, carbonate of ammonium and camphor are the most reliable. Many recommended strongly the use of some one of the alcoholic class of drinks, and mention the extraordinarily large doses borne by diphtheritic patients without intoxicating effects. So far is this from affording a reason for their use, that I should construe it in the opposite direction. Both the general susceptibility of the tissues and the sensibility of the nervous system are blunted or below the normal standard, and consequently, anæsthetics like alcohol, are neither indicated nor

readily responded to when given. The same principle or therapeutic rule applies here, that I explained more fully when speaking to you in relation to the treatment of typhoid fever.

If you can succeed well in fulfilling the first and second indications as now explained, the fulfillment of the third follows as a necessary result. Yet, when called early, and you find the skin hot and dry; urine scanty; tongue coated; and bowels inactive, you can give a small alterative dose of calomel with bicarbonate of sodium, every three or four hours, until three doses are taken; and if the bowels do not move in three hours after the third dose, give a mild laxative, and it will generally produce a favorable effect. The action of the skin and kidneys may be further sustained by suitable doses of spirits of nitrous ether and liquor ammoniæ acetatis. To fulfill the fourth indication, namely—to lessen the severity of the local inflammation in the fauces, air passages, and glands of the neck, a great variety of local applications have been used. During the severe epidemic in this country, occurring between 1856 and 1864, nitrate of silver in all gradations of strength, from the solid stick to a solution of 0.33 grams (grs. v.) to 30.0 cubic centimeters (fl. ℥j.) of water, was extensively and perseveringly used locally, with the expectation of arresting the membranous exudation and of limiting the extent of the inflammation. After an abundant experience, its use was abandoned by nearly all the more accurate observers as either useless or positively injurious. Applications of strong solutions of sulphate of copper, tincture of iodine, and tincture of the chloride of iron, were tried with no better results, and the profession generally had come to regard local applications of any kind as a matter of secondary importance, until Oertel and others again promulgated the doctrine that diphtheria is primarily a local disease, produced by the direct action of bacterial germs on the mucous membrane of the fauces and air passages, and through which they entered the blood, and secondarily, produced general infectious fever. Under this teaching the early and thorough local application, not of caustics, but of strong antiseptics or germicides, as carbolic, salicylic, benzoic and sulphurous acids, were brought prominently to the notice of the profession, and received the unqualified commendation of many practitioners. During the past

ten or twelve years diphtheria has prevailed with average severity in most of our large cities and in many country districts, affording abundant opportunities for testing the virtues of this class of remedies. And, aided by the coincident extravagant ideas in regard to the uses of antiseptics in the practice of medicine and surgery generally, they were enthusiastically applied in every form, and every degree of strength; in solution, with the swab and syringe; in spray, with the atomizers; and in vapor, by inhalations. As might be expected, the results, as reported at the various medical society meetings and through the medical press, have been varied. As a general rule, those who met the disease in a mild form reported great success. Those who met the disease in its more severe and malignant aspects, reported the usual ratio of mortality, and pronounced the germicide treatment useless. A middle class of practitioners, like a member of the Illinois State Society, reported, with enthusiasm, that the thorough application of pretty strong solutions of carbolic acid had aborted every case that had come under his treatment *before* the inflammation and exudation had entered the posterior nares or the larynx. But unfortunately the disease had extended beyond these limits in so many cases before coming under treatment, that the actual ratio of mortality to the whole number of cases treated, was the same as usual.

So, gentlemen, if you will diligently examine the statistics of cases and mortality in all the cities and municipalities in which such statistics have been kept, for the past ten years, in which germicidal theories and practice have predominated, with the same class of statistics for the preceding ten years, you will find no evidence that such practice has resulted in diminishing, in any degree, the ratio of mortality below that of the former decade. Having already stated to you that I regard diphtheria as primarily a general febrile affection, developing certain local inflammations of peculiar character during its progress, and having now explained the several object, to be accomplished in its treatment, it only remains for me to indicate more definitely which of the remedies mentioned for the several purposes I deem best, and their mode of use as adapted to the several stages of the disease. In the milder cases of simple diphtheria, very little medication is

either necessary or proper. For such, I direct a diet of milk and farinaceous articles, rest, as fresh good air as possible, a moderate, comfortable temperature of the room, and the following prescription for medicine:

℞			
	Potassii Chloridi.....	10.0 grams.	ʒijss
	Acidi Muriatici.....	4.0 c. c.	ʒj
	Tincturæ Belladonnæ.....	10.0 c. c.	ʒijss
	Aquæ.....	260.0 c. c.	℥viii

Mix. Give from two cubic centimeters (fl. ʒss.) to eight (fl. ʒjj), or from half a teaspoonful to a dessert spoonful, according to the age of the patient, every two or three hours, without further dilution. The application of this solution to the fauces and throat, is made much more complete and easy by swallowing it, than by any process of swabbing, sponging or gargling; while its introduction into the system constitutes one of the best means for fulfilling the first indication for general treatment. The solution of the chlorate of potassium with the mineral acid, combines the properties of an efficient antiseptic and tonic, while the influence of the belladonna on the vessels of the mucous membrane and glands of the throat and neck tends to lessen both tumefaction and membranous exudation.

During the last thirty years I have treated very many cases of mild diphtheria, without any other medication than the use of the formula just given. If, at any time during its use, the effects of the belladonna accumulate sufficient to perceptibly dilate the pupils, the dose should either be diminished or given at longer intervals. In cases of greater severity, yet not positively malignant, I give the same formula in the same manner during the first three days after the commencement of the disease. If the patient has been previously healthy and well nourished, and the pulse and temperature rise pretty actively, with scantiness of secretions, I give in addition during the first day, an alterative dose of calomel at intervals of once in two or three hours until three doses have been taken; and, if necessary, follow them by a mild laxative or warm water enema. After the bowels have moved, I direct a solution of iodine 0.33 grams (grs. v.) and iodide of potassium 2.0 grams (grs. xxx.) in 45 cubic centimeters (ʒjss) of water, to be given in doses suited to the age of the

patient, every six hours. During the same early stage, if the tonsils and glands behind and below the angle of the jaw commence to swell actively, I keep the external parts closely covered with cloths wet in an infusion of aconite leaves and chloride of ammonium, 30 grams (℥j) of the former, and 15 grams (℥ss) of the latter to one litre (Ojj) of boiling water. When, from any cause it may be difficult to keep the wet cloths applied properly, the following liniment may be used instead:

℞ Olei Olivæ.....90.0 c. c. ℥iij.
Olei Terebinthinæ.....15.0 c. c. ℥ss.
Chloroformi.....15.0 c. c. ℥ss.

Mix, and apply to all the external swollen parts every three hours, or often enough to keep the surface moist. If, under the remedial agents I have now mentioned the case progresses favorably, and when the time for the membranous exudations to begin to loosen and disintegrate comes, which is generally from the third to the fifth day, the breath and saliva do not become offensive, and the swelling of the glands does not increase further, there need be no essential change in the treatment except to lessen the frequency of doses as the disease declines, and an early convalescence will be reached. But if, at the stage just mentioned, the breath becomes offensive, the saliva more abundant, and mixed with more or less muco-purulent or sanious discharge from the throat and nostrils, with more dullness of expression and a softer pulse, I immediately exchange the chlorate of potassium and belladonna solution for the tincture of chloride of iron and quinine, given in moderate, but frequently repeated doses, and require more diligence in giving nourishment. The solution of iodine may generally be given with benefit two or three days longer. Under the influence of the quinine, iron, and simple nourishment, the patient will pass the crisis of the disease with only a moderate amount of ulceration and suppurative action in the inflamed membranes, and the general febrile symptoms will gradually decline until convalescence is established. In some of the more severe and malignant cases, the crisis of the disease is marked by great weakness, a more copious flow of offensive muco-purulent matter from the mouth and nostrils, and more extensive destruction of the inflamed structures by ulceration, and some-

times by gangrene. In such cases, I continue the use of the quinine and iron, and, in addition, give carbonate of ammonium and camphor, in moderate but frequently repeated doses, and add to what nourishment is taken by the mouth, the use of nutritive enemas. Unfortunately, in many of these cases, deglutition is so impaired that neither medicines nor nourishment can be swallowed in sufficient quantity to effect the needed support. Even in such, much can be done to sustain them until the throat begins to improve, by a judicious use of milk, beef tea, and other items of nourishment in the form of enemas, and most of the medicines required can be added to the enemas. Further support may also be given by inunction of cod-liver oil, in which may be suspended a small amount of strychnine. To a litre (Ojj.) of cod-liver oil may be added 0.2 grams (grs. iii) of strychnine. This may be well shaken and applied sufficient to anoint nearly the whole surface of the body three times a day. In the cases that present a strongly malignant aspect from the beginning, I give the quinine and tincture of chloride of iron, alternated with the carbonate of ammonium and camphor at once; and during the first twenty-four hours apply freely over the trunk of the body the cod-liver oil, holding in solution a small proportion of iodine; and, after the first day, the strychnine may be added in the proportion already stated.

During the last few years, I have used a solution of the benzoate of sodium as a substitute for the chlorate of potassium, and belladonna solution, in the early stage of the disease. Ten grams (℥jjss.) may be dissolved in 120 cubic centimeters (fl. ℥iv.) of water; of which four cubic centimeters, or one teaspoonful may be given to an adult every two hours. It appears to exercise much influence in limiting the amount of the membranous exudation, and is particularly well adapted to the early stage of the more active sthenic class of cases. Again, in the second stage of the disease, if the muco-purulent discharge from the nostrils becomes copious and offensive, or irritating to the parts with which it comes in contact, it will do good to have nostrils syringed out freely at least twice in the twenty-four hours, with a weak solution of carbolic acid and sulphate of zinc or of permanganate of potassium. If an anodyne is required at night to aid in procur-

ing rest, I know of none better than a powder containing the compound powder of opium and ipecac, 0.33 grams (grs. v.) and pulverized gum camphor 0.13 grams (grs. ii.) for an adult, and proportionably less for children.

I have now given you an outline of that course of treatment of the several stages and grades of severity of this disease, which has been, in my hands, the most beneficial to my patients, leading to the highest ratio of recoveries and leaving the smallest ratio of important sequelæ. One variety of cases, however, has been omitted from this outline, namely, the croupous or laryngo-tracheal. When the diphtheritic inflammation invades the larynx, whether primarily, with the beginning of the attack, or secondarily, by extension from the pharynx, I give, as early as possible, an emetic dose of the sub-sulphate of mercury, and repeat it at intervals of from two to six hours, until the stage of increasing exudation has passed. Thirteen centigrams (grs. ii.) of the sub-sulphate given in the form of powder, will generally produce prompt and free vomiting in children from three to five years of age. For older patients the dose should be increased, and for younger ones diminished. In the interval between the emetics, I give during the first twelve hours, a small dose of calomel and bicarbonate of sodium every two hours. To children from three to five years old, six centigrams (grs. i.) of calomel and twelve centigrams (grs. ii.) of the sodium, may be given at a dose. During the same period of time, a solution of lactic acid, 0.33 cubic centimeters (min. v.) to 30. c.c. (fl. ℥i.) of water should be frequently thrown into the fauces in the form of spray from an atomizer, and the liniment I have previously mentioned, containing oil of olive, oil of turpentine and chloroform, applied freely to the front and lateral parts of the neck externally. After the first four or five doses of the calomel and sodium have been given, they are omitted, and I give, instead, a solution of lactate of iron, 4 grams (℥j.) to 120 cubic centimeters of water (fl. ℥iv.) of water, of which 2 c.c. (fl. ℥ss.) or half a teaspoonful, may be given every two hours. If the invasion of the larynx has been secondary, several days after the commencement of the general disease, I omit the calomel and sodium powders, and commence the use of the solution of the lactate of iron, alternated

with quinine, at once. In all other respects their management is the same as I have just indicated.

Sometimes a mild anodyne and expectorant influence is needed to lessen the violent spasmodic quality of the cough and aid in promoting rest—especially in the later stages of the disease. For such purpose I know of nothing better than an equal mixture of the compound syrup of squills and camphorated tincture of opium, given in doses suited to the age of the patient. If a judicious use of the remedies I have just detailed should fail to relieve the patient, and suffocation be impending, the only alternative is a resort to tracheotomy, which almost always affords a surprising degree of temporary relief, but is very generally followed by an extension of the inflammation into the bronchial tubes and the ultimate death of the patient. During all the treatment of the croupous cases the temperature of the room should be kept a little above the usual standard of healthy comfort, and the air constantly impregnated with aqueous vapor. Some place much reliance on the inhalation of the vapor of hot water, in which quicklime is undergoing the process of slacking. I have seen it perseveringly tried many times, but with very little effect. I regard it of far less importance than the lactic acid spray, and even less beneficial than the old-fashioned remedy, consisting of the free inhalation of the vapor from a hot infusion of hops in vinegar.

Convalescence.—Due attention should be given to the management of the period of convalescence from all grades of diphtheria. To secure a proper action of the skin and kidneys, and promote the renewal of a healthy tone and sensibility in the muscular and nervous structures, the patient should be kept much at rest; well protected from sudden atmospheric changes by flannel underclothes; judiciously supplied with fresh, dry air, and plain, nutritious, and easily-digestible food. In the convalescence from severe cases, the taking of a small dose of strychnine or nux vomica, with a soluble salt of iron at each regular meal-time, will be of much benefit, both in hastening the return of strength and in lessening the risk of paralysis.

Prophylaxis.—The best means of preventing the spread of diphtheria is to isolate, as far as practicable, all cases as they

occur, and maintain essentially the same sanitary regulations as I mentioned for the prevention of typhus and typhoid fevers.

Sequelæ.—Congestion of the cortical texture of the kidneys, and general dropsy occasionally occur as a sequel of diphtheria, though much less frequently than after scarlet fever. For the treatment of such cases I refer you directly to the lecture on the sequelæ of the fever just named. The most frequent and troublesome of the affections that are liable to arise during the convalescence from diphtheria is some form of paralysis. In most cases it is limited to the muscles of the fauces and pharynx, and is only sufficient to simply give the voice a decided nasal quality, and make deglutition a little difficult; but is sometimes so complete as to render swallowing altogether impossible. During the prevalence of the disease in this city in 1858–9, I saw a case of this kind with the late Dr. J. A. Collins. The patient was a boy about eight years of age; and it was necessary to feed him liquid nourishment through a stomach-tube for two weeks, before he regained the power to swallow anything.

While the paralysis more frequently attacks the muscles of the fauces and throat, it may manifest itself in any one or more of the voluntary muscles in any part of the body and extremities. Or it may attack one set of muscles after another, until, like rheumatism, it has passed in succession over a large proportion of the voluntary muscles of the system. A case of this kind was brought to the Mercy Hospital two years since. It was in the person of a young man who had passed through a moderately severe attack of diphtheria, and recovered so far that he had begun light out-door work.

He first lost the power of speech and deglutition. In a few days these functions began to improve, when he lost all voluntary motion of the muscles of one side of his face and eye. Just as he was regaining control over these, the paralysis involved the muscles of both upper and lower extremities, and was so near complete that he could neither feed himself nor stand on his feet. It was at this stage of his disease that he was brought into the hospital. The paralysis following diphtheria, whether partial or complete, appears to be a simple loss of nervous force or muscular contractility, and is not accompanied by any inflammatory or

febrile symptoms, or even local pain and soreness. It very generally tends towards recovery, and probably never ends fatally, except in very rare instances, when it attacks the muscles of respiration or of the heart. No case has terminated fatally or failed to recover, within the circle of my own practice. The only remedies necessary are rest, good air, nutritious and easily-digestible food, and muscular and nerve tonics.

Of the latter, we have none better adapted to these cases or more promptly curative than strychnine, citrate of iron, and the hypophosphites. To an adult or patient over fifteen years of age, I give a pill or capsule containing strychnine, two milligrams (grs. 1-30), and citrate of iron, thirteen centigrams (grs. ii), before each meal-time; and four cubic centimeters (fl. ʒi) of either the syrup of the lacto-phosphate of calcium, or of the compound syrup of the hypophosphite of sodium, calcium, and iron, half an hour after each meal. Of course, proportionately less doses must be given to younger children.

Under such management the patients usually make a good recovery in from one to four weeks. The daily application of mild currents of electricity or galvanism has also proved beneficial.

HOT WATER IN THE TREATMENT OF HÆMORRHOIDS.—Landowski (*Chl. f. Chir.* from *Jour. de Thérap.*) suggests hot sitz-baths in bleeding piles, together with enemata of hot water. These not only check the bleeding, but diminish the size of the turgescent tumors to a marked degree. In ordinary hæmorrhoids three sitz-baths per diem may be employed. In bleeding piles the baths should be more frequent, and the enemata should be given as hot as the patient can bear (usually about 104°). *Louisville Medical News.*

Original Communications.

ARTICLE II.

PUERPERAL ECLAMPSIA; HIGH FORCEPS OPERATION; RECOVERY.

By THEODORE TRUMBULL, M.D., of Monticello, Florida.

Carrie B., æt. seventeen, primipara, was delivered on October 20, 1881. Her labor commenced by the discharge of the liquor amnii, about one o'clock on Monday morning. On the Tuesday prior to her confinement she complained of severe cephalalgia, dim vision, and transient dizziness, spots before the eyes and œdema of the subcutaneous cellular tissue, especially of the face. On the morning of her delivery she awakened with complete loss of sight, and soon thereafter was seized with a convulsion. She had eight strong convulsions between six and twelve A. M., at which time I arrived. I gave chloroform inhalations at short intervals; not keeping her completely anæsthetized. She had bitten her tongue, and was somewhat semi-stupefied ere the administration of the chloroform. She was again seized at 12:30, the attack lasting one minute and fifteen seconds, with frothy saliva collecting about her mouth, pulse full and carotids bounding; the whole appearance was so changed as to render the patient quite unrecognizable. The attacks would first begin by the violent twitching of the muscles of the face; her expression was horribly altered; the globes of the eyes were turned up under the eyelids, so as to leave only the sclerotics visible, and the angles of the mouth were retracted and fixed in a convulsive grin. The convulsive movement soon attacked the muscles of the body; after the face, the hands and arms, at first rigidly fixed, with the thumbs clenched into the palms; then the whole

muscular system was thrown into rapidly recurring convulsive spasms. At 1:45 P. M. she had another, which lasted longer than the one prior. When in full headway, her radial arteries ceased to beat, while the action of the heart was very feeble, and the sounds, though normal, seemed distant, as though a pillow were placed between her chest and the ear of the auscultator. The involuntary muscles were implicated, as well as the voluntary, as was verified by the temporary arrest of respiration at the commencement of the attack, followed by irregular and hurried respiratory movements, producing a peculiar hissing sound. During the attacks sensibility was totally suspended, and the patient was unconscious even between the attacks, or in rather a stupefied condition.

On examination per vaginam, I found the os uteri dilated to a certain extent, yet the cervix was in reach. Seeing that the expulsion of the uterine contents alone could save the life of the suffering and completely exhausted primipara, I therefore resorted to instrumental delivery, and my only expedient was the high forceps operation. After placing the patient under complete anæsthesia with chloroform, then placing her near the edge of the bed, with the thighs flexed on the abdomen, an assistant at each knee, I proceeded. As stated above, the os was not fully dilated, but enough for the forceps to be scientifically introduced. I lubricated my left hand, then introduced it in the vagina as a guide, to avoid any possibility of injuring the cervix; then, with my hand in the vagina, introduced the lower blade of Hodge's lever forceps, previously oiling the outside of said blade. Finding the bladder distended, I introduced a catheter, and drew off about twenty ounces of urine (which proved, by testing, to be cloudy with albumen); this being done, I introduced the upper blade, which was done with more difficulty. Finally I succeeded in locking my instruments; then I began making traction downward toward the perineum. The pains being absent, my tractions were intermittent, so as to imitate nature as nearly as possible. When the caput succedaneum was pushing against the vulvæ, I elevated the forceps upward toward the mons veneris. The contents of the rectum and the little urine which still remained in the bladder made their escape through their normal orifices, which

in all cases is exceedingly disagreeable to the attendants, especially the accoucheur; hence the necessity of keeping the bowels open during the last week of utero gestation and an enema the day before; but in this case time was too precious and life too dear to delay one moment for preparatory cleanliness. A fine boy (stillborn) was delivered at 4:35 P. M. When I first arrived, by auscultation the fœtal heart, also the placental soufle, could be distinctly heard. The umbilical cord was wound tightly around its neck; whether that produced its death, or whether it was seized with convulsions in utero remains a mystery, as either would have caused its death. Attempts were made to reanimate it by inflating the lungs, friction, etc., but without effect; the heart could not be made to beat even once. The cord was then severed.

She had only one convulsion after the delivery. Pulse 148, respiration normal, with occasional sighs; would notice no one; very restless and thirsty. Ten P. M., about the same; completely exhausted. October 21, two A. M., pulse 102; respiration 20; somewhat quiet; micturated during the night. Seven A. M., pulse 90; talks with attendants, knowing nothing about what happened, and asks why the doctor was there; sight good enough to distinguish faces. Uterus contracted nicely, and supporting bandage all right. Three P. M., some fever, which continued during the night. October 22; feeling better; no fever; pulse soft and slow. Relished a cup of coffee and some gruel; sight fully returned. Tongue sore from being bitten during the attacks; micturates without difficulty.

The precise pathology of eclampsia cannot be considered by any means satisfactorily settled. When, in the year 1843, Lever first showed that the urine in patients suffering from convulsions was generally highly charged with albumen, a fact which subsequent experience has amply confirmed, it was thought that a key to the etiology of the disease had been found. It was known that chronic forms of Bright's disease were frequently associated with retention of urinary elements in the blood, and not rarely accompanied by convulsions. The natural inference was drawn, that the convulsions of eclampsia were also due to toxæmia resulting from the retention of urea in the blood, just as in the uræmiæ of chronic Bright's disease; and this view was adopted and supported

by the authority of Braun, Frerichs, and many other modern writers of eminence, and was pretty generally received as a satisfactory explanation of the facts. Frerichs modified it so far, that he held that the true toxic element was not urea, as such, but carbonate of ammonia, resulting from its decomposition; and experiments were made to prove that the injection of this substance into the veins of the lower animals produced convulsions of precisely the same character as eclampsia.

Dr. Hammond, of Maryland, subsequently made a series of counter experiments, which were held as proving that there was no reason to believe that urea ever did become decomposed in the blood in the way that Frerichs supposed, or that the symptoms of uræmia were ever produced in this way.

Spiegelberg has, more recently, again examined the question clinically, in a patient suffering from convulsions, in whose blood an excess of urea and ammonia was found, and by experiments on dogs, and maintains the accuracy of Frerich's views. Others have believed that the poisonous elements retained in the blood are not urea or the products of decomposition, but other extractive matters which have escaped detection. Broxton Hicks, who has recorded a considerable number of cases, says that albuminuria and convulsion are almost invariably combined, and must be explained in one of three ways:

First. That the convulsions are the cause of the nephritis.

Second. That the convulsions and the nephritis are produced by the same cause, *e. g.*, some detrimental ingredient circulating in the blood, irritating both the cerebro-spinal system and other organs at the same time.

Third. That the highly congested state of the venous system induced by the spasm of the glottis in eclampsia, is able to produce the kidney complication.

TREATMENT.

On my arrival I gave inhalations of chloroform (Squibbs') at short intervals; seeing no decided effect, I ordered the following:

℞ Chloralis hydratis.....ʒvʊj.
Potass. bromidi. .....ʒj.
Tinct. opii deodorat.....ʒiv.
Aquæ fontis. .....ʒiijss.

M. Sig. Give a dessertspoonful in a tablespoonful of water every three hours.

This mixture acted like a charm in warding off the attacks. Fluid extract of ergot was given (drachm) in the second stage. After the expulsion of the placenta, which occurred twenty minutes after the delivery, a profuse hæmorrhage set up, which was checked by the administration of ergot, tamponing the vagina and kneading the uterus. It soon, however, assumed the size of a cricket ball; then the supporting bandage was properly adjusted. Ordered light but nourishing diet. Sulph. cinchonidia, grs. viij, every morning at six o'clock. October 21,

℞ Kal. iodidi .....ʒx.
Tr. belladonnæ ....ʒiv
Aquæ fontis..... .....ʒijss.

M. Sig. Give a teaspoonful three times a day; also apply over each mamma a belladonna plaster 6 by 6, to produce galactischesis.

Ordered the vulva and external orifice of the vagina thoroughly lubricated, and the vagina syringed with tepid water, with a few minims of carbolic acid, and a warm towel to be kept over the parts.

October 22. Pulse normal; improving. Slight cephalalgia; complains of photophobia. 23d. Still improving; half ounce of oleum ricini; chloral mixture (formula above) to be given three times a day. 24th. Appetite returning; removed plasters from breasts. Sleeps well at night. Had two stools; slight fever in afternoon. 25th. Chloral mixture every morning. Slight increase of temperature; still complains of photophobia. 26th. Improving; appetite good; plasters removed; sat up awhile. 28th. Milk ceased oozing; no fever. Lochial discharges slight, pale greenish color and very sickening aroma; hence familiarly described as "green waters."

ARTICLE III.

NEOPLASM. By H. D. VALIN, M.D. Read before the Chicago Pathological Society, January 30, 1882.

Life is an integration, and disease a disintegration of force. As integration necessarily takes place at one point at the expense

of disintegration at another point, it results that wherever growth or development is taking place, vitality is slightly in excess; while in cases in which there is decadence, there is an excess of diseases. This is well illustrated in old age.

This biological law of relation between decline and disease is applicable to organisms in general, animals or plants, to species and series of individuals, and, by analogy, is also applicable to social or moral organisms; that is, religions, governmental and educational institutions.

Protoplasm, or protein, is a compound of carbon, hydrogen, nitrogen, sulphur and oxygen, which constitutes the plasma and fills the cells of young plants and animals.

Neoplasm is a strictly abnormal growth. It has no regular chemical composition, may or may not be endowed with life, and is generally recognized from its useless or harmful propensity in the economy of life. As protoplasm is the physical basis of life, neoplasm is the material basis of disease.

In the unity of nature, we first meet with the equivalent of neoplasm in the crystallization of minerals. Thus, according to the degree of impurity of the solutions used, we obtain crystals containing some extraneous substances which are useless, or may impair the quality of the crystals in various respects. Most of the crystals formed in nature are impure.

In plants, especially the least organized, as the equisetaceæ, a large quantity of sand and dirt finds its way along the vessels into every part of the plant; and so also, in some degree, in the greater part of the vegetable kingdom. One of the causes of this is that matter is primitively indiscriminately mixed in the soil, through the agency of water and other actions, and cannot at once become differentiated into definite organic compounds but it does so after passing through various series of organisms, each one of which eliminates its part of the foreign elements. Thus, in higher animals, the inorganic primitive substances are not by any means so common. They are frequently found, however, and we have the satisfaction of knowing that we can introduce more or less of all the sixty-eight elements into the animal economy without interfering to any very great extent with the process of life—which sustains the fact that, after all, the substance

of an organized being is very near that on which that organism feeds.

The clearest instance of an accumulation of foreign matter in the human body is probably found in those cases in which the bones have been loaded with mercury to such an extent as to be greatly increased in weight; or the cases of chronic lead-poisoning in which we are enabled to recover the metallic lead from the tissues. We have another instance of accumulation in uræmia; for not only is inorganic matter a factor in neoplasm, but so also is organic matter. Thus, it is possible for crystals, as those of the calcareous sponges, to contain protein. The lower plants, when fed too much manure, cease to grow, and in those wonderful plants, as the Sarracenia, which feed on small animals, sometimes some large insects are caught by them, which eat their way out, causing the destruction of the plant instead of promoting its growth. In the same manner, animals sometimes die after eating other animals or plants to which their systems have never been accustomed. Trichinæ and anthrax act in this manner in man, and so also, probably, all the infectious diseases. But the absorption of living organisms, and their elimination, give rise to a highly complex process.

Thus far, we have only considered extrinsic elements in their absorption, and we may now consider them in the act of being secreted. In crystals, foreign particles may not materially interfere with the chemical affinity of the compound, and although it may provoke an earlier disintegration, at any rate it cannot be eliminated until a re-crystallization takes place. There is no doubt that the same is nearly true of plants. However, here we sometimes come across excretions and secretions, and in highly organized plants, these secretions are a metamorphosis of protoplasm into oil, sugar or starch. We also find in plants genuine tumors, though generally produced by the irritation of fungi and insects. Through these growths, an elimination of unsuitable elements often takes place. These elements and these growths are both neoplasm, as defined above. Foreign material is often taken in the food, remaining in contact with the tissues, and the immediately surrounding cells slowly displace it as they continually work from the center to the periphery of the organism,

following the course of growth. But the protoplasm which infiltrates through these foreign elements is not organizable, and is also discharged with them by more healthy tissues. In animals, as in plants, an early decay of neoplasm also helps in its elimination.

Neoplasm, as every substance in nature, reacts to chemical action, and in that manner, even purely inorganic deposits in an animal tissue must grow as long as the same element is absorbed in excess by the animal, or is absorbed in excess by surrounding tissues. There is hardly any doubt that growth mostly proceeds from a chemical union, in each cell, of the proximate principles of protein. At any rate, Gubler has formulated the law of localization in this manner: "Substances foreign to an organism rejoin their like or their analagous elements among the normal principles of that organism." * This explains the origin of those concretions found in old cases of gout, and of concretions in general.

Not only foreign elements and neoplastic tumors are rejected, but what was once healthy tissue may be rejected in senile gangrene; because, as in gangrene in general, the circulation has stopped in such tissues, from various causes.

According to the laws of generation, any one cell of a higher organism strictly corresponds to the whole, and undergoes the same changes on a small scale, and its growth must, under the same circumstances of force and surroundings, reproduce the parent in every particular.† The reason of this is that the various modes of force act through all substances in inverse ratio to the distance.

Thus, a cell which has become a part of a tissue, has been differentiated chiefly by the immediate action of that tissue, and it will be more likely to reproduce that same tissue under favorable conditions. Hence, in low organisms, in some lizards, an amputated limb is reproduced in the neighboring tissue, and in man, cartilage cells give birth to cartilage; skin cells to new integument, etc., and cancer cells reproduce cancer. But these

* E. Haeckel, *Journal de l' Anatomie et de la Physiologie, etc.*, Nov., 1875.

† *Vide* "A New Theory of Generation," in the February No. (1882) of THE CHICAGO MEDICAL JOURNAL AND EXAMINER.

same cells also prove their ability to reproduce the whole organism in certain tumors, in which most all the varieties of tissues are sometimes represented.

Besides spermatozoa and ovules, the cells mostly endowed with the genetic process are the white corpuscles of the blood, which keep on the changes of life for weeks under the microscope. If we overlook monsters, which are properly the first steps in abnormal genetic formations, the process of reparation in wounds is the most simple instance of abnormal growth. Here we find that the cells of the blood are set free, a most abnormal state; but they continue to organize into tissues, though these cicatricial tissues are never so perfect as the normal tissue was. Hence the liability on the part of such structures, under various circumstances, to start into growth anew, and give rise to tumors. Tumors, from warts up to cancers, are often proven to be contagious, most naturally, for contagion is nothing else but a conservation of vitality in any cell or granule of protoplasm, in passing from one animal body to another. No one could deny that every cell is an animal or a plant in itself, be it blood, cartilage, or a seed, for it is endowed with a life of its own.

Besides the organization of new tissue, we sometimes meet with the establishment of a new function in wounds, but more often in chronically inflamed mucous membranes; a function of excretion, through which a great deal of urea, and other results of tissue metamorphosis, are continually eliminated. These functions act to such a degree as to reduce the work of some physical function. Thus, in profuse leucorrhœa, the bowels almost cease working, and in diabetes the skin atrophies from disuse, it seems. These new functions, however closely related to cancer they may be, do not generally come under that head.

Hypertrophy is another process closely related to the formation of tumors. Indeed, an excess of growth is something abnormal, and generally results from over-feeding an organ, as in hypertrophy of the muscles of the arm in pugilists and blacksmiths; hypertrophy of the breast, etc.; and whenever we have an irregular hypertrophy of a part, we call it a tumor.

Tumors, having a life of their own, are antagonistic in their growth to the growth of the animal in which they form, and on

which they live. They necessarily act as foreign bodies, and the healthy tissues separate from them by ulceration, in the same manner that they would if held in contact with any foreign substance. Besides, the cells of tumors are not so highly organized as those of the various tissues, and come to disintegrate much earlier. An early removal of a tumor prevents its recurrence, but after the cancerous elements have penetrated the organism, the same process is likely to repeat itself elsewhere.

New growths are most interesting in their biological relations. They afford the most numerous instances of spontaneous generation, and the best understood also, that is a new organism, the cancer cell, originating from entirely different organisms, the embryonic, or any other cell, or ordinary plasma, under special circumstances. This proposition has been substantiated by the conclusions which one would naturally derive from the late experiments of Drs. Leopold in Germany, and Michael T. Prudden in this country.

Whether tumors ever acquire such individuality as to deserve the name of parasite, and whether any of the well-known parasites were thus evolved from the organism on which they live, is a difficult problem to solve, though the fact that tumors, once evolved, generate by contagion, supports that theory, at all times believed in by some.

We may say that the nature of malignant or recurring tumors is but a slight perversion of the metamorphosis of cells in general; that anything which impairs the system at large is favorable to new growth; that the lack of coincidence as to the time at which various organs or tissues reach their maturity, and the periodical regeneration of organs, like the breasts and the womb, naturally favor new growths; and in corns we have new growths which entirely depend on local irritation. Habitual congestion of a part is also productive of the same result. As to the influence of the mind in the production of cancer, it is not by any means to be rejected. For, of all the modes of force which bring on the differentiation of cells and tissues, there is none so powerful as that complex of modes of force called the mind. It is almost probable that each cell functions in unison with general consciousness; that this rhythm becomes manifest when unduly

increased, and we call it pleasure; or whenever it is decreased, and then we call it pain. But we lack the knowledge and the facts necessary to prove that an organic disease may arise from a peculiar, long continued idea, though we can prove that a disease may be cured through such means.

We find in disease what we find in health, and in life in general; the evolution of one process into another, and of one tissue into another, in the course of time, under determining causes. That is not manifest on studying any process exclusively, but it becomes so upon inquiring into lines of demarkation which are to be found nowhere.

Protoplasm, by losing its nitrogen, becomes cellulose; cellulose passes into sugar; sugar into fat, and the fats seem to pass into albumen. The same in pathology; albumen reverts to fats, in fatty degeneration, or becomes transformed into mucine by losing its oxygen or its sulphur, colloid being an intermediate product in the latter transformation; and amyloid also results from a slight change in the chemical composition of albumen.

Looking at the various processes of disease, we also find that they merge into one another. Thus, the exudation of inflammation, the secretions of ulcers, the hypertrophy of organs, new growths and cancers, are differentiations of an abnormal vital process. Hence the impossibility of forming absolute divisions. But as the boundary margins which unite these diseases are but slightly marked and rarely looked for, it becomes easy to build a classification which answers ordinary purposes.

It is not our intention to describe diseases nor to formulate treatment, but we may say that we do not help nature in its abnormal processes by our treatment; we antagonize such processes. Man, although himself a part of nature, has such a command over various modes of force that he is enabled to re-distribute matter and force on the face of the earth in an opposite manner, almost, from that in which they have been evolved by other natural causes; and wise treatment is active, not passive treatment. Thus, we supply proximate principles to an organism when they are wanting; we remove some of them through evacuants, sudorifics, etc., if in excess; but we especially remove

metamorphosed substances. We also add direct force to an organism in the way of sunlight, heat, electricity, motion and food.

ARTICLE IV.

PULSATILLA IN INFLAMMATIONS OF THE TESTIS. By G. FRANK LYDSTON, M.D.

Although the use of pulsatilla in the treatment of disease has been chiefly confined to the homœopaths, attention has been called to its efficacy, particularly in inflammatory affections of the testis, by several members of the regular profession, Dr. Piffard having especially commended it.

A short time since, having a hospital service in which there were abundant opportunities to test its efficacy, I began its use in such cases. I had previously employed the ordinary methods of treatment, such as applications of ice, hot fomentations, tobacco poultices, etc., thus having ample scope for the comparison of the results derived from the different procedures. The results of the remedy were very gratifying, and in most instances, whether given alone or in combination, superior to the ordinary measures for relief of the above inflammations. The records of the cases so treated at that time I did not retain, but they contained a large number of cases. I have been fortunate enough to have a series of five pronounced cases within the last few months, the histories of which I have, and will recount, hoping that they may prove of interest.

Case I.—*Gonorrhœal epididymitis.*—Patient is a plethoric subject, æt. 35; stated that he contracted a severe gonorrhœa some three weeks previously, which ran the usual course, until two days before consultation, when the right testicle began to swell and became very painful, the urethral discharge having ceased. He complained greatly of dragging pain along the cord The epididymis of the affected side was extremely swollen and of almost stony hardness, and the tunica vaginalis greatly distended. the tenderness on pressure was very marked. He was ordered a mercurial cathartic, and tr. pulsatillæ in 10 m. doses, every two

hours. The testes were supported upon oakum. On the following morning the pain had entirely ceased and the tenderness was perceptibly less. There was no change, however, in the bulk of the testicle, although the fluid in the tunica vaginalis seemed less transparent. At the end of twenty-four hours the pulsatilla was stopped. There was no recurrence of the pain, and on the fourth day the tenderness was so far reduced that strapping was admissible, and was continued until the organ had regained its usual size.

Case II.—*Rheumatic orchitis.*—Patient, a carpenter; æt. 24. Denied having had venereal disease of any description, and stated that he contracted his present trouble by sitting upon a cold stone step for some time, he having on thin pantaloons. The pain was especially severe, and was accompanied by considerable nausea and fever. There was also some tenderness and swelling of the ankle joints. The body of the testis was swollen and tender; the epididymis somewhat enlarged, with slight effusion into the tunica vaginalis. He was given a saline cathartic and put upon tr. pulsatillæ m. v. every hour. In twenty-four hours the pain which had been so severe, that I had thought seriously of subcutaneous incision of the testis, had considerably abated, and on the third day had disappeared, leaving, however, some tenderness and no appreciable change in the swelling. Hot fomentations and poultices were now ordered and continuously applied, until the induration had disappeared.

Case III.—Epididymitis from passage of sounds for relief of stricture and gleet, of long standing. Patient, engineer; had had gleet for over a year, and had previously had a number of attacks of gonorrhœa. On the day following a somewhat prolonged instrumentation of the urethra, pain and great tenderness of the left testicle developed. The same treatment was adopted as in the preceding case, with, however, in addition, x minims of fl. ex. jaborandi every hour, he having considerable fever and complaining greatly of thirst. On the third day pain had entirely ceased and poultices were ordered.

Case IV.—*Gonorrhœal epididymitis.*—History of previous attack in same testicle, which laid the patient up for four weeks. The same line of treatment was adopted as in previous cases, and

with marked success—the pain ceasing in twenty-four hours, and the gentleman being at his work again on the eighth day, the testicle, however, being strapped to produce resolution of the swelling and support the organ, thus preventing a relapse and enabling the patient to attend to his business, which compelled him to be upon his feet a great deal of the time.

Case V.—Somewhat similar to preceding case. Swelling and intense pain of neuralgic character in both the inflamed and sound organs, this pain having severe exacerbations shooting along spermatic cord and down the inner aspect of thighs. There was also considerable pain in the back. Fifteen minims of the tr. pulsatillæ were given every second hour, with the usual preliminary cathartic. In forty-eight hours the pain was markedly diminished, there being, however, some increase of the swelling. The remedy was stopped on the third day and poultices applied. There was a slight recurrence of the pain on the fifth day, which was again readily controlled, in a few hours, by the pulsatilla.

From observation of the action of pulsatilla upon the above cases and others, which, though carefully noted as to the effects of the remedy, were not recorded, I have been led to the conclusion that it is of great value. The drug has long borne the opprobrium of being a homœopathic preparation, and has been highly recommended by the small-pill fraternity; they, however, have administered it only in infinitesimal doses, in which it is obviously impossible to obtain its physiological effects, so that it would be practicable to determine whether their so-called beneficial results were due to their small doses of the drug or were really the natural course of the affection, they never having applied rational measures of treatment, and being consequently devoid of data for comparison. They do not give any explanation of its action, but speak in a vague manner of its specific effect upon the mucous membranes, the female generative organs and the cerebro-spinal axis. It is probable that its effects are manifested principally through its influence upon the nervous system. It seems to have a specific action upon the testis itself, as evidenced by the speedy relief of pain and tenderness, although it has no effect upon the induration of the inflamed organ, and does not appreciably diminish the serous effusion attendant upon

such cases. The beneficial effects of the drug in gonorrhœal epididymitis may possibly be due in some measure to its action upon the inflamed urethral tract, which constitutes the source of most of the cases of that disease.

I can not reconcile my observations to those of Dr. Piffard, who in some of his earlier investigations of the subject found that five minim doses of tr. pulsatillæ aggravated epididymitis, while the same drug, in doses of one-tenth of a minim every three hours, rapidly cured the disease. The doctor evidently has great faith in infinitesimals.

I am not aware to what extent regular practitioners have investigated the action of pulsatilla, nor to what extent it has been written upon, but I trust that it may receive a fair trial, and if it be found to be as valuable as I have been led to believe it, that it may enter more extensively into the pharmacopœias of legitimate physicians, thus rescuing a useful drug from the obscurity of homœopathic practice.

137 EAST MADISON ST., CHICAGO.

ARTICLE V.

PRACTICE AT THE COUNTY INFIRMARY. BY A. W. HAGENBACH, M.D., Assistant Superintendent Cook County Insane Asylum and Infirmary.

The Cook County Infirmary, with an average daily population of seven hundred inmates, with hospital accommodations for 110 patients (sixty males and fifty females) is located ten miles northwest of the center of the City of Chicago, and accommodates all the sick pauper patients not cared for in any of the other charitable institutions of Cook County. The accompanying tables will show the total number of cases treated in "Male Hospital Department" of Infirmary during the year 1881. In looking over the tables certain peculiarities present themselves which need some explanation. In the tables of "Medical Cases," two cases are entered as "anasarca, general;" as anasarca is not a disease *per se* but merely a symptom, it would seem necessary to state

why they were entered as such in the tables. In both instances the patients, when admitted, presented no other prominent symptoms; neither of them were suffering with kidney or heart disease. The anasarca was regarded as a result of some previous disease, character unknown, which had left the blood alternated, so as to give rise to the dropsical effusion. The cases were accordingly entered as general anasarca, when admitted to the hospital, and so appear in the tables.

The second item calling for explanation is the large number of cases entered as "debility, general." By glancing over the tables of ages, it will be seen that 245 or over 50 per cent. of the total number of cases treated were over fifty years of age, while seventy-nine were over seventy years of age. A majority of the very old patients were admitted to hospital on account of general debility, they being too feeble to live in the other departments where they would have been compelled to leave their rooms to eat in a common dining-room. The ten cases of "Variola" developed in patients sent to hospital previous to the appearance of the eruption.

Another item needing an explanation is the large number of cases of angina pectoris, as compared with valvular lesions of the heart, there being six of the former and five of the latter. It must be remembered that the tables include all the cases treated during the year, each readmission being counted as a new case. Two patients with angina pectoris were each twice readmitted to hospital during the year, while patients with valvular lesions of heart, unless in an advanced stage, are rarely admitted to hospital at all. The large percentage of cases of "Phthisis Pulmonalis" is accounted for by the fact that but a limited number of these patients are admitted to the Cook County Hospital, the only charitable public hospital in Chicago. The frequency of diarrhœa among the inmates is due to previous abuse of the digestive organs, as well as the infirmary diet which, while containing all the proximate principles in sufficient quantities to keep up nutrition, does not present that variety which is conducive to perfect digestion and assimilation. The treatment generally followed in such cases is the administration of a cathartic, to remove all irritating matter from the intestines; castor oil generally answers

better than any other cathartic, as it acts purely as an evacuant, and is non-irritating. The oil is generally followed by slightly astringent preparations and a more liberal diet. This simple treatment generally effects a speedy cure. In certain cases characterized by a want of intestinal tonicity, the following preparation has been used with marked success:

℞ Olei terebinth .... ʒ ij.
Tinct. opii..... ..... ʒ iii.
Syr. krameriæ .... ʒ ij.
Aquæ pura ad..... ʒ iv.
M. Emulsify.
Sig.—Teaspoonful every 3 or 4 hours.

I have also found this mixture, very useful in certain cases of diarrhœa, among the chronic insane. The promiscuous use of astringents is useless, and capable of doing harm by irritating the mucous lining of stomach and intestines.

The only items in tables of "Surgical Cases" calling for special notice are the large number of cases of fractures, and the case of "Strangulated Inguinal Hernia." The fractures of femur, of neck of femur, ribs, and of tibia and fibula, were admitted immediately after the accidents by which they were caused, and were treated here throughout; the remaining cases were transferred from Cook County Hospital with dressings applied. The patient with strangulated inguinal hernia was admitted to hospital department for the second time. The hernia could not be reduced either time, even after the patient was completely anæsthetized. As there were no alarming symptoms present, he was placed in bed, and ice bags applied continuously over tumor for twelve hours, when it was reduced without difficulty. The tables of "The Cause of Death" call for no special explanations.

Nativity of Patients treated in Cook County Infirmary—Male Department—during the year 1881.‡

United States, white	75	Germany	111
" " black	14	Holland	1
	89	Ireland	148
Batavia	1	Norway	20
Belgium	1	Russia	2
Bohemia	13	Scotland	7
Canada	10	Sweden	22
Denmark	7	Switzerland	2
England	25		
France	3	Total	462

Ages of Patients treated in Cook County Infirmary—Male Department—during the year 1881.

From 12 years to 20 years	4	From 60 years to 65 years	32
" 20 " 25 "	19	" 65 " 70 "	43
" 25 " 30 "	26	" 70 " 75 "	27
" 30 " 35 "	39	" 75 " 80 "	26
" 35 " 40 "	40	" 80 " 85 "	20
" 40 " 45 "	50	" 85 " 90 "	5
" 45 " 50 "	39	" 90 " 95 "	1
" 50 " 55 "	39		
" 55 " 60 "	52	Total	462

Statement of Medical Cases treated in Cook County Infirmary—Male Department—during the year 1881.

General.

Ague, tertian	6	
Alcoholism	2	
‡Anasarca, general	2	
Anemia	5	
‡Debility, general	55	
Fever, remittent	1	
" scarlet	1	
" typhoid	1	
Lumbago	1	
Opium habit	1	
Pleurodynia	2	
Pyemia	1	
Rheumatism, chronic	8	
" articular acute	4	
" syphilitic	6	
‡Variola	10	
	106	
*Malingerer	3	
		109

Lungs.

Asthma	11	
Bronchitis	32	
Emphysema	1	
‡Phthisis pulmonalis	49	
Pleuritis	4	
Pleuro-pneumonitis	2	
Pneumonitis	7	
		106

Nervous System.

Apoplexy, cerebral	1	
Ataxia, locomotor	3	
Catalepsy	1	
Dementia	6	
Epilepsy	3	
Hemiplegia, right	13	
" left	12	
Mania, acute	2	
Myelitis	1	
Paralysis	2	
" agitans	3	
" arm	2	
" both extremities	1	
Paraplegia	3	
		53

Heart.

‡Heart, valvular lesions of	5	
Angina pectoris	6	
		11

Intestinal Tract, &c.

Cirrhosis, liver	4	
Coeliagra	1	
‡Diarrhœa	23	
Dysentery	1	
Gastro-enteritis	4	
Tabes Mesenterica	1	
		34

Kidneys.

Bright's disease	3	
Total		316

Statement of Surgical Cases treated in Cook County Infirmary—Male Department—during the year 1881.

Abscess.		
Abscess, leg from erysipelas	3	
" " " injury	2	
" Axilla	1	
* " Mastoid cells	1	
Carbuncle over Mastoid process	1	
		9
Affections of Bones and Appendages.		
Caries, elbow joint	1	
Exostosis, tarsal bones	1	
‡ Fracture, femur	1	
" " neck of	1	
" humerus	2	
" patella	2	
" "Potts"	2	
" ribs	2	
" scapula	1	
" tibia and fibula	2	
" ulna	1	
Hip joint, disease	1	
Knee, dislocation	1	
Necrosis, femur	1	
* Osteo sarcoma, femur	1	
Paronychia	1	
Spinal curvature	2	
Sprain, ankle	1	
Tarsus, crushed	2	
		26
Affections of Integument.		
* Combustio, dermatitis	1	
Erysipelas, traumatic	9	
Frost bite	5	
Scrotum, gangrene of	1	
Stumps, ulcerated	4	
* Ulcers, indolent	17	
" inflamed	1	
" syphilitic	1	
" varicose	11	
		50
Specific.		
Cancer, rectum, scirrhus	1	
" neck, encephaloid	2	
" pylorus, scirrhus	2	
Syphilis, primary	9	
" secondary	7	
* " tertiary	2	
Gonorrhœa	4	
		27
Not Classified.		
Cataract, senile	4	
Conjunctivitis	4	
Contusions	9	
Hernia, double inguinal	2	
† " inguinal strangulated	1	
Hydrocele	2	
Prolapsus, rectum	2	
Stricture, urethra	2	
Synovitis	6	
Trichiasis	2	
		34
Total		146

Nativity of Patients who died in Cook County Infirmary—Male Department—during the year 1881.

United States, white	18	Germany	30
" " black	2	Ireland	31
	20	Norway	2
Belgium	1	Sweden	7
Bohemia	6	Switzerland	2
Canada	4	Scotland	2
Denmark	1		
England	3	Total	111
France	2		

Ages of Patients who died in Cook County Infirmary—Male Department—during the year 1881. ‡

From 15 years to 20 years	1	From 55 years to 60 years	11
" 20 " 25 "	3	" 60 " 65 "	9
" 25 " 30 "	4	" 65 " 70 "	16
" 30 " 35 "	12	" 70 " 75 "	9
" 35 " 40 "	6	" 75 " 80 "	7
" 40 " 45 "	7	" 80 " 85 "	5
" 45 " 50 "	10	" 85 " 90 "	1
" 50 " 55 "	9	" 90 "	1
		Total	111

Cause of death of Patients in Cook County Infirmary—Male Department—during the year 1881.

Immediate Cause.	*Complications.*	
Alcoholism		1
"	Dysentery	1
		2
Apoplexy, cerebral	Hemiplegia, right side	1
" "	Old age	1
" "	Hemiplegia	1
		3
Asthma	Chronic bronchitis	5
Bronchitis		3
"	Acute tonsilitis	1
"	Old age	2
		6
Bright's disease	Valvular lesions of heart	1
Cancer, pylorus, scirrhus		2
" neck, encephaloid		1
		3
Cirrhosis, liver	Icterus, peritoneal dropsy	1
" "	Peritoneal dropsy	3
		4
Combustio, dermatitis		12
Debility, general	Dementia	2
" "	Hemiplegia	3
" "	" right side	1
" "	" left "	1
" "	Old age	9
" "	Suppurating buboes	1
" "	Ulcers, both legs	1
" "	Paralysis, both extremities	1
		19
Dementia	Hemiplegia, right side	1
"	Old age	1
"	Hemiplegia	1
		3
Diarrhœa		5
"	Cystitis, chronic	1
"	Dementia	2
"	Hemiplegia	1
"	Melancholia	1
"	Old age	4
"	Paralysis both extremities, partial	1
"	Ulcers, legs	1
"	Hemiplegia, right side	1
		17
Fever, scarlet, malignant		1
" typhoid		1
Gastro-enteritis		1
Hemorrhage, pulmonary	Phthisis pulmonalis	1
Heart, aortic and mitral lesions	Enlargement by dilatation	1
Inanition	Bronchitis	1
Mania, acute	Ulcerated stump	1
Myelitis	Paraplegia and bed sores	1
Osteo Sarcoma		1
Paralysis Agitans		1
Phthisis pulmonalis		15
" "	Anemia	1
" "	Bronchitis	1
" "	General anasarca	1
" "	Diarrhœa	2
" "	Angina pectoris	1
" "	Hypertrophy of heart	1
" "	Pleuritis circumscribed	1
" "	Syphilis, secondary	1
		24
Pleuritis circumscribed	Phthisis pulmonalis	1
Pleuro pneumonitis, left side		1
Pneumonitis, left lower lobe		1
"	Hydro-thorax	1
"	Phthisis pulmonalis	2
"	Bronchitis	1
		5
Pyemia from erysipelas		1
" " abscess of mastoid cells		1
		2
Rheumatism, chronic	Bronchitis	1
Suicide by hanging		1
Syphilis, secondary		1
Tabes Mesenterica		1
	Total	111

Recapitulation of Cause of Death.

Immediate Cause.		*Complications.*	
Alcoholism	2	Anemia	1
Apoplexy	3	Bronchitis	9
Asthma	5	Cystitis	1
Bronchitis	6	Bed sores	1
Bright's disease	1	Diarrhœa	2
Cancer	3	Dropsy	4
Cirrhosis	4	Dysentery	1
Combustio dermatitis	1	Dementia	4
Debility	19	Heart lesions	4
Dementia	3	Icterus	1
Diarrhœa	17	Melancholia	1
Fever, scarlet	1	Old age	17
Fever, typhoid	1	Paralysis	13
Gastro enteritis	1	Phthisis pulmonalis	4
Hemorrhage, pulmonary, immediate	1	Tonsilitis	1
Heart, lesions of	1	Syphilis	2
Inanition	1	Ulcers	3
Mania, acute	1	Hydro-thorax	1
Myelitis	1	Pleuritis	1
Osteo sarcoma	1	Not specified	40
Paralysis agitans	1		
Phthisis pulmonalis	24	Total	111
Pleuritis	1		
Pleuro pneumonitis	1		
Pneumonitis	5		
Pyemia	2		
Rheumatism	1		
Suicide	1		
Syphilis	1		
Tabes Mesenterica	1		
Total	111		

* Cases reported in this article.

† I would acknowledge the valuable assistance rendered by Mr. T. Sydney, in preparing the tables.

‡ See explanations of tables.

Malingerers.—Malingerers are frequently met with in the infirmaries of large cities, among a class of shiftless men who, after spending all their earnings during the summer, will resort to any disreputable means to gain admission to some charitable institution during the winter months. Physicians who have had experience in dealing with paupers generally recognize such customers at a glance, but even they are sometimes deceived.

Case.—Only a few months ago, an apparently healthy man presented himself at the dispensary department, asking for an excuse from work on account of paralysis, which he claimed affected his right arm. His general appearance, and the position of the member, which was held closely to the side, led me to suspect him of being an impostor. Upon trying to elevate the arm, I found the muscular resistance so great that I experienced some difficulty in raising it to a horizontal position. When released, it descended with considerable force to its original position. Asking an attendant to hold the arm in a raised position, I directed the patient's attention to an eruption on his face, at the same time giving the nurse a nod to release the arm, which remained stationary for several moments after the support was gone, when he suddenly jerked the arm downward with great force, to the amusement of several inmates who were present during the examination. It is perhaps needless to state that after being detected he at once went to work, and never afterward attempted to "sham Abraham." The ignorance of symptomatology displayed by this patient is characteristic of the usual pauper malingerer, and the chief element that leads to immediate detection. An exaggeration of symptoms is almost daily encountered among the older inmates, who know that sickness will assure an excuse from work, as well as special diet. While malingerers generally are readily detected, some will mislead the most experienced. A remarkable case came under my observation in 1877, in the female hospital department of the infirmary.

Case.—Maria B., æt. about fifty, complaining of severe pain in head and back, also of loss of power in extremities, remained in bed for several years, the dread of the nurses, and the pest of the attending physicians. She became so exacting in her demands that Dr. J. Lawless, the assistant superintendent, had her removed

to an adjoining building where she could be more isolated, and would necessarily receive less attention than in the hospital department. Judge of our surprise when, on the following morning, her bed was empty, and Maria was nowhere to be found, as she had left during the night. It might be claimed that a proper diagnosis should have been made of the case long before; but to show that the physicians at the infirmary were not the only ones deceived by her, it might be well to state that several months later, while passing through the wards of the Cook County Hospital, Dr. Lawless found her snugly in bed, as troublesome as ever. On informing the physicians of his experience with her at the infirmary, she was at once dismissed. A few days later she was seen on the railroad, walking toward Milwaukee, where I have no doubt she succeeded with her impositions, as nothing has been heard of her since. Of the three cases recorded in the tables, but one needs special notice.

Case.—T. T.,* æt. forty-two, admitted October 20, 1881.

Ever since discharged from hospital department, where he had received special attention, he tried to gain a readmission, claiming that since dismissed he was subject to fits. His continued effort to gain readmission, as well as the contradictory character of his story as told at different times, led us to suspect that the fits were feigned. He was sent to hospital, the nurse receiving instructions carefully to notice his general deportment. I was called to see the case by Dr. A. Baldwin, house physician, a few days after his admission, while suffering (?) from a very severe attack. I found him lying in bed, foaming at the mouth, kicking and twisting himself into innumerable shapes. The muscular contractions were limited almost entirely to the right side. Owing to the violent exertions, he was bathed in perspiration. Pulse 80. Pupils normal in size, and responding readily to light. To confirm our suspicions concerning the nature of the fits, the administration of chloroform was discussed in the presence of the patient. A small quantity of chloroform poured on a towel was held over his mouth and nose. The fits immediately grew milder, and ceased suddenly after three or four inspir-

* This is the same patient who had previously been treated in hospital, suffering with perineal abscess and gangrene of scrotum.

ations, and have not since returned, the patient working steadily in the hospital kitchen. The treatment followed in such cases is very simple and effective. The malingerer is at once dismissed or set to work.

Osteo Sarcoma.—Case. J. F., æt. seventeen, admitted May 26, 1881. Previous history unknown, as the patient was unable to give any account of himself, or even the address of his friends. He was emaciated, and acted as if in great pain, crying out whenever touched. He would frequently moan for hours; then suddenly cry out, as if in great agony. He spoke of the pain as "shooting through the leg." His entire left thigh was enormously enlarged from knee to hip joint, measuring at the thickest part 31⅝ inches in circumference. Circumference of body on a line with umbilicus 27½ inches. The integument of thigh was of a light stone color, and greatly stretched, so that the sweat pores were widely separated. The superficial fascia was ruptured in several places similar to what is seen beneath the abdominal integument toward the close of pregnancy. The thigh was hard to the touch, excepting a few small spots which were quite soft, giving to the finger the sensation of some deep seated semi-fluid substance. The superficial veins of thigh were enormously enlarged and tortuous, as were also the superficial epigastric, and superficial circumflex iliac veins on lower portion of abdomen on the side corresponding with the tumor. No ulcerations had taken place, the integument being intact throughout. The surface of the tumor presented numerous elevations and depressions, giving it a somewhat lobulated appearance. The leg was greatly atrophied, the contrast between it and the thigh was so marked, that it was almost impossible to conceive of the former as ever having supported the latter. So great was the weight of the enlarged thigh that he was utterly unable to raise it from the bed, and only with great difficulty was he able to change its position slightly. His bowels were loose throughout. He failed rapidly and died of exhaustion June 3, 1881. The only treatment adopted was the administration of morphine to relieve pain, large doses affording but slight relief. Good diet and cleanliness were prescribed throughout. At a post-mortem held twenty hours after death the general appearance of the thigh was the same as already

described. An incision was carried along the anterior median line of the thigh dividing the integument and superficial fascia, exposing the muscles spread out very thin, and so pale that I at first mistook them for the deeper fascia. Immediately beneath the muscular layer a dense white membrane was found, enveloping the entire growth. This membrane was nearly a line in thickness and very dense, giving a sensation to the hand in dividing similar to that experienced in cutting cartilage. Beneath this membrane the entire tumor was found distended with a granular lardaceous matter, and a small quantity of liquid resembling glycerine in color and consistency. The tumor was divided into innumerable cells or spaces by a thin shining membrane, in certain portions of which small deposits of osseous matter were found. The spaces were of all sizes, containing from several drachms to a quart or more of the lardaceous matter. When the bone was exposed it was discovered that the entire thickness of the shaft of the femur was honey-combed, the compact tissue in some places had been completely destroyed by an ulcerative process, the cells of the cancellous tissues were enlarged.*

Combustio, Dermatitis.—Case. H. C., cook; while pouring kerosene out of a can containing nearly a gallon of the oil on some ignited wood in a cook-stove, the kerosene in the can caught fire, caused an explosion to take place, throwing the burning contents all over him, burning him severely about the face, upper and lower extremities, and a portion of the trunk, involving fully one half of entire surface of the integument in the burn. Several pieces of integument were unavoidably detached in removing the clothing to which it had become adherent in places. Severe nervous shock was the chief symptom following the accident. The extremities were cold. Pulse small and compressible. Temperature 97½ F. Lime-water and linseed-oil dressings were applied continuously and stimulants freely administered. A few hours after the accident he commenced to complain of pain in epigastric region, followed by vomiting. The stomach became very irritable, at first rejecting liquid food administered, and several hours later would not retain a single drachm of water.

*For a very interesting case tending to show hereditary nature of osteo sarcoma, see "Gibbon's Surgery," Vol. I.

He died 92 hours after the accident. A post-mortem was held 16 hours after death and the following pathological conditions were noted. Severe congestion of all the internal organs examined, especially the stomach and intestines. Several small ulcers were found in duodenum, two were quite deep, involving the muscular coat. I have no doubt had the patient lived several days longer, they might have caused complete perforation. The case illustrates the acute character of the duodenal ulcerations, which 92 hours after the accident had already destroyed the mucous and involved the muscular coat of the intestines. From the appearance of the deeper ulcers we were led to believe them of at least 48 hours duration previous to death. If correct in this estimation the ulcerative process was established inside of two days after the accident. I have been unable to find any satisfactory explanation of the cause of the ulcerations, notwithstanding the theory of the arrest of the exhalent functions of the injured integuments, etc.

Abscess of Mastoid Cells and Pyæmia.—Case. H. S., aged 40, was admitted to hospital department February 12, 1881, on account of "general ill health." Several weeks after admission he commenced to complain of pain in left ear, followed in a few days by a free discharge of pus. Thorough cleansing with warm water and the use of a slightly astringent solution was followed by marked improvement, the pain and discharge disappearing almost entirely. Several weeks later the pain returned, also severe pain in mastoid region was complained of. Hot fomentations were applied back of the ear for several days without affording relief from pain. Several ounces of blood were removed by making free incisions over mastoid process, affording partial relief, but as the pain soon returned with increased severity, and suspecting the presence of pus in the mastoid cells I concluded to afford it a free outlet. Several holes were drilled into the mastoid cells with an ordinary bone-drill and a button of bone removed, afterward breaking down the bony septa between the cells. The entire cavity was found filled with ichorous pus, which was removed, and the cavity washed out with a five per cent. solution of carbolic acid. The operation afforded almost instant relief from pain. The general health of the patient, however, became

more and more impaired, and he experienced several severe chills the day following the operation. Mucous râles were also found present in both lungs. Large pus cavities formed in both hands, right axilla, right forearm, and later upon back; when opened they discharged large quantities of poorly conditioned, offensive pus. His appetite completely disappeared. Temperature ranged from 101° to 104° F. He lingered for ten days in a miserable condition and died of "exhaustion accompanying pyæmia" April 4, 1881. Ferruginous and vegetable tonics, good diet and stimulants were freely used.

Tertiary Syphilis.—The rules governing the admission of patients to the charitable institutions supported by this county prohibit the admission of patients suffering with primary syphilis. The occasional exceptions made to the rules will account for the nine cases recorded in the tables. The City of Chicago has made no provisions whatever for this unfortunate class of patients, and if all were admitted to the infirmary, the hospital department would accommodate no other patients. As the unfortunate pauper suffering from syphilis has no means of procuring treatment during the primary stage of the disease, cases are not unfrequently admitted with secondary, or even tertiary symptoms who have received no previous treatment. One of the worst cases of tertiary syphilis ever admitted was discharged during the present year, relieved.

Case.—W. P., sailor, aged 45, was admitted January 12, 1879. He had contracted syphilis about two and a half years previous to his admission. For reasons already stated he was unable to gain admission to any of the charitable institutions supported by this county, until he presented such a loathsome appearance, that to rid the city of his presence, he was finally sent to the infirmary. When admitted, he was covered with ulcers, varying in size from that of a split-pea, to several inches in diameter. Numerous patches of pustules were also found, beneath which destructive ulceration was going on. One very deep ulcer was located immediately over the sternum, exposing fully an inch of the gladiolus to view. Both feet (especially the right), were masses of dried pus, scabs and ulcers, bearing but slight resemblance to a human member. One of the attendants, when he saw the

patient for the first time, was so struck by his appearance, that he named him "skinny," an appellation that hung to him until discharged. The great destruction of integument should have suggested skinless as a more expressive term. The treatment, at first, consisted in the application of hot fomentations wherever the pustules had not broken down so as to expose the ulcers beneath. Hot fomentations were also used to soften all hardened accumulations. When all the ulcers were exposed to view, it was found that they involved fully a third of the entire surface of integument. A dressing of simple cerate was applied to ulcers and the following mixture prescribed:

℞ Hydrarg chl. coros.. .. gr. iss.
Potas. iod..... ..... ij.
Syr. sars. comp..... iii.
Aquæ Pura ad..... ... viii.

Sig. Tablespoonful three times a day.

This treatment was followed for several months without any apparent improvement. The general health of the patient commencing to fail, iron, and later, cod-liver oil were prescribed. Various other preparations of mercury were at times substituted for the hydarg. chlor. corrosivum, in the above mixture. The improvement was very slow, when in August, 1880, I determined to use medicated steam baths in connection with internal medication. Iodine, sulphur, and carbolic-acid baths were alternately administered. After a few baths a marked improvement was noticed in the appearance of the ulcers; which were completely healed at the end of four months. His protracted confinement in bed had caused muscular rigidity of flexor muscles of both thighs to take place, so that the leg could not be fully extended. With returning health and exercise this complication gradually disappeared, he being able to walk with the aid of an ordinary walking-stick when discharged from the hospital, July 30, 1881. The surface of the integument not involved by the ulcers presented a pale, harsh appearance, and a large quantity of epithelial scales were removed every day. The general health of the patient at times was greatly impaired, when specific remedies were discontinued for short periods. With the exception of these intervals, perhaps three months in all, he was under "mixed," iodine and mercury, treatment until discharged. This case is reported to illustrate

what persistent treatment will accomplish even in the most aggravated cases of tertiary syphilis, with especial reference to the efficacy of medicated steam baths, which I have found very useful in a number of cases where internal remedies had proven of but little value.

Carbolic Acid Poisoning.—Case. *Mrs. D., German, aged 35, for several years an inmate of the Cook County Hospital, for insane suffering from "chronic mania;" on October 19, 1881, succeeded in gaining access to a bottle of full strength carbolic acid, of which she swallowed a quantity, estimated at from one to two ounces. The female attendant on the ward, who saw her almost immediately afterward, said the patient "appeared as usual" and informed her that she had taken a dose of "medicine." While leading the patient to her room she suddenly became "drawn together," her hands clenched and strongly flexed upon forearms. Medical aid was at once summoned. Dr. H. Gray, who attended the call within ten minutes of the accident, found her unconscious, lids partially closed, lips and tongue white, face of a dark hue, and marked venous congestion. The odor of carbolic acid was very apparent the moment he approached the patient. About a pint of olive oil was injected into stomach, removed in a few minutes and a second pint of oil injected, the patient expiring a few moments later. The breathing at first was sighing, later stertorous. Temperature and pulse not noted. At a post-mortem held twenty hours after death, the odor of carbolic acid was still quite noticable about the mouth of the corpse. Lower half of entire body of a uniform red, a lighter hue than usually observed in post-mortem statis. The tongue and roof of mouth showed evidence of the action of some corrosive substance. The mouth and tongue were white, excepting where the mucous membrane had been detached so as to expose the deeper tissues, which were red and congested. No other abnormal appearances were detected by external examination. The contents of the thorax and abdomen were next examined. The stomach was found distended with air and the oil injected previous to death, and of a deep red color in patches on its external surface. The entire intestines were

*This patient was not an inmate of the Infirmary proper, but of Insane Hospital adjoining and under the same medical management.

congested, the smallest vein, when cut into, was followed by the escape of liquid blood of a brighter red than ordinary venous blood. The stomach, and ten inches of the duodenum were removed and laid open for further examination, when the mucous membrane on posterior surface of stomach, near the great cul de sac, was found hardened and of a dark brown color. This I regarded as the spot where the concentrated acid first came in contact with the mucous lining of the stomach, the hardening being due to the coagulation of the albumen of the membrane. Over the remainder of the stomach the mucous membrane was almost completely destroyed, so as to expose the muscular coat smooth and shining beneath. This destruction of the mucous membrane I do not regard as due to post-mortem digestion,* as the gastric juice must have been changed by the acid, and there was no possible mistaking the direct action of some corrosive substance. So powerful was the action of the acid that several arterioles had ruptured, and the expelled blood upon coming in contact with the acid had coagulated. The portion of the duodenum removed was highly congested, and of a uniform red color. The œsophagus, when spread out, presented a striped appearance, alternate red and pale lines extending its entire length. This appearance was regarded as due to the arrangement of the mucous membrane in longitudinal folds. Two blue spots about the size of a small bean were noticed beneath the mucous membrane, immediately above the œsophageal opening in diaphragm; when cut into they were found to contain dark coagula. As these spots contained the only coagulated blood found in entire body, I regarded them as due to some injury to the œsophagus, previous to death, possibly the arrest for a time of some foreign body accidentally swallowed.† The liver and lungs were distended with liquid blood. The heart was completely empty, and a small deposit of tubercle was detected in the apex of left lung.

Perineal Abscess and Gangrene of Scrotum.—Illustrating the rapidity with which extensive destruction of scrotal tissues are repaired.

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*The digestion of the walls of the stomach that sometimes takes place after sudden deaths in vigorous subjects.

†Foreign bodies are quite frequently arrested in œsophagi of the insane. See my article on "Surgery among the Insane," also "Foreign Bodies in Surgery."—*Poulet.*

Case.—* T. T., aged 42, suffering for may years with facial neuralgia, presented himself at the out-department of the Cook County Poor House, Oct. 4, 1880, complaining of severe pain in scrotum and testes. Upon examination, found perineum hard and swollen, with erysipelas involving the entire scrotum. He was transferred to the hospital department, and hot water dressings were ordered to be applied continuously.

Oct. 5th. Scrotum swollen to twice its size, and erysipelas extending over lower part of abdomen. The penis is greatly distended, with effusion under integument. Hot water dressings continued, and the following preparation prescribed:

℞ Quiniæ Sulphatis.....3j
Tinct. Ferri Chloridi.....3ij
Syr Tolutani.....3j
Aquæ Puræ aa. ..... M

Sig.—Teaspoonful 3 times a day.
Opium in sufficient quantities to relieve pain.

Oct. 6th. The erysipelas extending higher over abdomen. Scrotum enlarged to the size of the fœtal head. The swelling of perineum enlarging and very painful. No fluctuation can be detected.

Oct. 7th. The case was seen to-day, by Drs. Wilde, Cohen, Bessler and Thiely, of Chicago, who advised a continuation of the treatment adopted, and expressed an unfavorable prognosis, as all the symptoms present pointed to extensive destruction of scrotal tissue and death from exhaustion, or septicæmia. Opening the perineal abscess, as soon as the pus approached the surface, was recommended.

Oct. 8th. About 5 o'clock this A.M. the abscess opened spontaneously near the center of the perineum, discharging a large quantity of poorly-conditioned, offensive pus.

Oct. 10th. Circulation in anterior surface of scrotum entirely arrested. Urine escaping through opening in perineum, an elastic catheter was passed into the bladder without difficulty.

Oct. 14th. Line of demarkation commencing to form, the mortification involving greater part of anterior surface and base of scrotum. Carbolized linseed poultices were now applied instead

* This case was reported by me in an article on "Surgery among the Insane." Read before the West Chicago Medical Society, and published in the *Journal of Nervous and Mental Disease*, Vol. viii. No. 1. January, 1881.

of hot-water dressings; the slough at once commenced to separate, and was completely removed by the 19th, when nearly half of the scrotal tissue was gone, both testicles being plainly exposed to view, the left protruding partially through the opening. After pressing the testicle upward, applied strips of adhesive plaster, bringing together the opposite sides of the wound, and affording support to the testicles.

Oct. 24th. Adhesive straps have been applied daily since the 19th; opening about one-half former size. Opening in perineum almost closed. Patient can retain urine for several hours, and but little escapes through opening in perineum.

Oct. 30th. Healing very rapidly, the opposite side of the wound remaining in contact without strapping; testicles in normal position.

Nov. 15th. Wound healed, and patient discharged cured in less than a month after the destruction of nearly half of the scrotal tissue.

Ulcers.—Of all the surgical cases admitted to this institution, these are by far the most numerous. The city hospitals being crowded with patients, suffering from more acute affections, rarely admit more of these cases than are required for clinical purposes; hence, the large percentage treated at the infirmary. Thirty cases of ulcers of inferior extremities are recorded in the tables, but this number does not include one-half of the cases actually treated, as only those it is impossible to care for in other apartments are ever transferred to the hospital. Some of the ulcers are very large, extending in some instances from the ankle almost to the knee, and involving nearly entire circumference of leg. The treatment usually pursued is: 1st. To place the patient in recumbent position; 2d. The application of hot fomentations until parts are thoroughly cleansed; 3d. A thorough application of caustic, to stimulate parts to healthy action; 4th. The use of strips of adhesive plaster to support edges of ulcer. Ointment or salves are very rarely used. Skin grafting is resorted to in suitable cases, after the granulations present a healthy appearance. I have found the greatest success in grafting, by applying the bits of integument immediately upon the granulations, without much, if any, scarification of the surface of the ulcer. I suc-

ceeded a few weeks ago in growing six out of nine pieces, grafted in this manner on a patient who had undergone several previous unsuccessful operations, two of which were performed by a Chicago surgeon of note. The patient had but little faith in the way I performed the operation, and informed me that it was "very difficult to make them take" on him, as Dr. —— had tried it upon two occasions, each time scarifying the granulations until the blood trickled down the leg, and still they refused to grow. The deep incisions causing a free escape of blood, glazing entire surface of ulcer, I regard as the chief, if not sole reason of the failure of previous operations. Attention must also be paid to the general health of patients with every variety of ulcers.

Varicose Ulcers.—So far as the ulcers are concerned, the same general treatment is followed as in the indolent variety, with the additional application of a roller, or rubber bandage, to compress the enlarged veins. It was formerly my custom to ligate the veins in a large percentage of the cases that came under my care, affording permanent relief in several cases. I have had but one case in which the operation was accompanied, or followed by any alarming symptoms.

Case.—J. R., aged 42, was transferred from the Cook County Hospital, where he had undergone two previous operations; six pins had been inserted each time. When admitted he desired to have the treatment continued, claiming to have derived great relief from the previous operations. As quite a number of varicose veins still remained on both legs, I inserted five pins under the most prominent of the veins, crossed them with twisted silk suture, and allowed them to remain until they had ulcerated completely through the inclosed tissues. He was then allowed several weeks to recuperate, when five pins more were inserted and crossed with twisted suture as before. Two of the pins had already ulcerated completely through, when the patient commenced to complain of pain in the head and jaws, followed by thickness of speech and difficulty in swallowing, especially fluids. The two remaining pins were removed, and linseed poultices applied over both legs. He suffered intense pain, and rapidly grew worse, the jaw became firmly locked, and later the muscles of neck and back became involved in the spasm. The slightest cutaneous irritation was

followed by severe tetanic contractions. Growing rapidly worse, he died forty-eight hours after the appearance of alarming symptoms. The treatment consisted in the administration of chloral hydrate and opium, with chloroform inhalations, for several hours previous to death, to control the violent spasms. An enema of tobacco was also administered, and followed by a free discharge from the bowels. I was inclined to ascribe the exciting cause of the tetanus to nervous irritation, caused by including a nerve of considerable size in some one of the last five ligatures.

COMMUNICATION OF SYPHILIS BY SKIN-GRAFTING. — Dr. Deubel communicated the following case to the Société Médical des Hopitaux: A man, aged forty-nine, who had never contracted venereal disease, became, in January, 1881, the subject of gangrenous erysipelas of the thigh, which was attended with a large ulceration, having its starting point in the superficial ulceration of some hemorrhoids, that, except at some isolated points, refused to cicatrize. On March 7, forty-five dermo-epidermic grafts, furnished by five persons, were inserted, and thirty-three of these contracted adhesions; and twenty other grafts taken from seven persons, aged from twenty to forty years, were placed on another part of the wound on the 23d, thirty of the number retaining their vitality. Grafts from the mucous membrane of the mouth of a rabbit were also employed, and on March 23 forty new grafts, taken from persons aged from twelve to fifty-four years, were applied. Cicatrization went on satisfactorily until April 5, when ulceration commenced in the now almost cicatrized wound where the first grafts had been planted, and soon destroyed the cicatrization. The grafts applied on the second occasion did not ulcerate, but became pale and fell off. The new ulceration had a syphilitic aspect; but the man's wife, who had nursed him, having also been attacked with erysipelas which proved fatal, and a lodger suffering from lymphangitis, it was concluded that the whole had arisen from infectious causes due to the very unsanitary condition of the house in which they all resided. The ulcerations improved on being touched with nitrate of silver, but new ones kept appearing during the next three months, and ten weeks after the first application of the grafts the skin and scalp became the seat of syphilitic eruption, and some weeks later the mucous membrane of the mouth was affected. A mercurial and iodide treatment was put into force, and eight months after the first appearance of the erysipelas the breach of surface became entirely cicatrized. It turned out that a son, who had furnished some of the grafts, was the subject of syphilis.

Clinical Reports.

ARTICLE VI.

OVARIOTOMY. BY Professor THEOD. BILLROTH, Vienna. Reported by Dr. R. Stansbury Sutton, Formerly Lecturer on Gynæcology, Rush Medical College, Chicago.

This patient, Josepha Stedoma, is fifty-six years of age. She was married for eight years, during which time she gave birth to five children; the last was born in 1861. She is now a widow. Two years ago she observed a swelling in the abdomen. This swelling has constantly increased, and has at times been accompanied with pain. She has not complained of any distress in the functions of the bladder. During the last six weeks she has suffered a good deal of pain in the abdomen, which has been very sensitive, even to slight pressure. Eight days ago this pain subsided to a marked extent. At present, when recumbent, she has no pain, but when she walks she has some discomfort in the right hypochondriac region. The patient began to menstruate regularly at twenty years of age, and menstruation ceased at forty-eight. She is moderately large. She is anæmic, but her heart and lungs are normal. Dullness on percussion begins at the fifth rib on the right side, and extends over the enlarged abdomen. The abdomen is free from spots or marks upon the surface, and is also free from œdema and enlarged veins. The skin is tolerably tense.

Circumference at the umbilicus	39 in.	98 Cent.
From zyphoid cartilage to umbilicus	6 in.	15 "
From symphysis pubis	4¾ in.	12 "
From sup. spinous process of ilium to umbilicus on both sides,	11 in.	28 "

The abdomen is moderately well distended, and the skin is

tense. Fluctuation is distinct at all points. On palpation, there is found on the left side a peculiar parchment-like crepitation. Two fingers' breadth below the zyphoid, to the left side, the dullness begins, and extends downward to the symphysis pubis and laterally into the lumbar region. A vaginal examination reveals the os uteri high in the pelvis and the uterus movable.

OPERATION.

The abdomen was well washed, scrubbed and shaved, and finally rubbed off with a compress wet with five per cent. solution of carbolic acid. The ordinary mixture of chloroform 100 parts, ether 30, and alcohol 30 parts was administered. An incision was now made in the linea alba seven or eight centimeters in length, ending four centimeters above the symphysis pubis. The exposed multilocular cyst was now emptied of six litres of dark, heavy fluid. The small adhesions, quite numerous, were separated with the fingers. Firmer ones were tied with carbolized silk sutures and burnt off with Paquelin's cautery.

The cysts were emptied sufficiently for the removal of the solid portions. The pedicle was found to be from the left ovary. The pedicle was long and not twisted. With a clamp a furrow was now made across the pedicle, and in this furrow the pedicle was tied in two sections with carbolized silk ligatures, cut short. The cyst was now cut away with the knife. The stump of the pedicle was now over a sponge divided again exterior to the ligatures with Paquelin's cautery. The "toilette de peritoneum" was carefully made, and the wound was now closed with a row of deep sutures of silver wire and lead buttons, and a row of superficial carbolized silk sutures. The wound was now dressed with iodoform gauze, Mackintosh cloth and a binder.

In the evening, ten hours after the operation, the temperature was 37° and pulse 92. The next morning the pulse fell below 90, and did not again rise above it. The temperature never exceeded 37 5–10°. The wound healed by first intention, the sutures were removed on the seventh day, and the patient was discharged on the seventeenth day after the operation.

ARTICLE VII.

FIFTEEN CASES OF TYPHOID FEVER IN COOK COUNTY HOSPITAL. Read Before the Chicago Medical Society, Feb. 6, 1882. Reported by H. D. VALIN, M.D.

I.—O. T., eighteen years of age, a Swede; laborer; was admitted to the hospital August 1, 1881, having been sick five weeks already. The disease began with a chill, which recurred three weeks later. Patient had been in bed eleven days. At first there had been constipation, and later diarrhœa. Petechial rose spots were present on the abdomen. On the day of his admission to the hospital, his temperature was 104°, and his pulse 90. He was placed in the wet sheet, took the fever mixture, consisting of cinchonidia sulphate and aromatic sulphuric acid, in ordinary doses, every three hours, and took one-third grain of iodine three times a day from August 16 to 24, when he got well. After August 1 his temperature never rose above 103. He received a milk diet. He was sick eight weeks.

II.—A. Q., æt. twenty; a Swede; brick-mason; fell sick July 17, 1881, with a diarrhœa, and had epistaxis the 21st. He was living in bad hygienic surroundings, and he was admitted to the hospital July 25. Temperature 103; pulse 94. His temperature rose to 104 July 30, and to 104.5 August 4, after which it gradually returned to a normal condition, the patient leaving his bed July 20. The high temperature was reduced both times by placing the patient in the wet sheet. The treatment consisted of cinchonidia sulphate and aromatic sulphuric acid. Patient had been sick twelve weeks before entering the hospital, and was not discharged till four weeks later.

III.—J. I. æt. eighteen; English; laborer; had been exposed to bad weather, poorly fed, had bad water to drink, and lived in unhealthy surroundings. He was taken sick with chills, fever and diarrhœa, and came to the hospital July 27, the sixth day of his disease. Temperature 103; pulse 94. His temperature rose to 104 July 30, and he was placed in the cold wet sheet, cold sheets being renewed every fifteen minutes till the temperature came down to 102 or lower. He received the ordinary dose of cinchonidia sulphate and aromatic sulphuric acid. August 3,

his temperature was 104. August 4 his pulse was 62, and his temperature 100.5. He took ten drops of the fluid extract of jaborandi. August 11, his pulse was 58, and his temperature 93.3. He soon afterward got well.

IV.—N. D., æt. twenty-five; Swede; laborer in the lumber yards; was admitted to the hospital August 4, and had been sick already three weeks. He had come to this country nine months ago. Had had epistaxis three times, and diarrhœa. At the time of his admission, his temperature was 103, and it rose to 104 August 6. He was placed in the wet sheet. August 8, it was found necessary to catheterize. Temperature did not rise much above a hundred subsequently, and August 20 he was well. The treatment consisted of the same remedies as in the preceding cases, and he also took one-third of a grain of iodine every three hours.

V.—C. F., æt. twenty-one; Swede; blacksmith; had been sick two weeks when he came to the hospital, August 13. His temperature was 105. His father had died of pneumonia, and he has an œzena. He came to this country seven months ago, and at the time that he was taken sick he slept with nine companions in one room, on Kinzie street. All of them were sick, and four of the number came with him to the hospital, sick with typhoid. August 14 he was kept in the wet sheet three hours, and again the 15th, 16th and 18th. August 23, he was well.

VI.—C. P., æt. twenty-two; Dane; cabinet-maker; was admitted to the hospital August 8, after he had been sick two weeks. He came to this country two months ago, and he had slept with a companion in a small room. Had diarrhœa from the start. The temperature ranged from 100, 102, to 99, and he was discharged August 24. Had the ordinary treatment.

VII.—S. J., æt. twenty-three; Swede; laborer; was sick a week before his admission to the hospital, August 6. He came to this country two years ago. On admission his temperature was 102.5, and there was some diarrhœa. Besides the fever mixture, he took half an ounce of whisky three times a day. His temperature ranged from 102 to 98, and August 27 he was well.

VIII.—F. G., æt. thirty-one; German; willow-ware maker; was sick two weeks before his admission to the hospital, August 11.

His bowels at that time had not moved for four days. Pulse 104; temperature 103.8. Dry, sibilant râles over both lungs, and expectoration of a light-colored mucus. August 22, he took two drachms of castor oil with ten drops of spirits of turpentine, to move his bowels, and took the sulphate of cinchonidia mixture the rest of the time. He was well in a few days.

IX.—E. A., æt. twenty-five; Swede; worked in the lumber yards; was sick a week and a half, and then came to the hospital, August 13, when his pulse was 68, and his temperature 100. His father had pneumonia three times, and he had it himself four years ago. He came to this country fourteen months ago, and had been in Chicago five months. He was taken sick on Kinzie street, with Case V, and several others. He had a chill, and epistaxis. He was administered two drachms of castor oil with ten drops of spirits of turpentine, and received an enema. August 15, his pulse was 48, and his temperature 99. Besides the ordinary mixture, he took five grains of sulphate of cinchonidia every three hours. August 15 and 20 he had a profuse perspiration, and August 22 he was well.

X.—T. M., female, æt. seventeen; Norwegian; came to Chicago a year ago; was sick two weeks before coming to the hospital, August 1. Sickness had begun with a chill, and she was costive. On admission, her pulse was 106, and her temperature was 104.8. Tongue heavily coated brown. There was some sore throat and cough. Sibilant râles over the lungs. She was placed in the wet sheet, but her temperature remained high till August 8. Two small abscesses formed, August 7, on the dorsum of the sacrum, and an eruption appeared all over the body. Patient was somewhat delirious. There was subacute bronchitis. From August 15 patient improved till the 22d, when she got well. There had been no diarrhœa. She took the fever mixture as the rest of the cases.

XI.—J. K., æt. 61; American; machinist; had typhus fever when sixteen years of age. Went to the army, and had chronic diarrhœa during three years; was wounded five times. Present sickness began with a chill, slight vomiting, severe griping pain and tenesmus. Passed a tapeworm in June last. He was admitted to the hospital August 16, after a day's sickness, and his pulse

was 93, and temperature 100.2. He took iodine, one-third of a grain three times a day. The diarrhœa stopped August 18. August 22 he was well. There had been no rise in the temperature.

XII.—J. L., æt. twenty-nine; Swede; worked in lumber yards; had been sick a week and came to the hospital, August 8. He had come to this country a year and a half ago. Last spring he had a fever which lasted three weeks. The present sickness began with constipation, and a greenish vomit. August 12, the temperature was 103, and he was placed in the wet sheet for four hours. He began taking iodine August 16, had a profuse perspiration the 18th, and he improved till the 27th, when he got well.

XIII.—S. J. N., æt nineteen; Swede; brick-mason; came to this country a year ago; lodged with three companions in one room, and fell sick with diarrhœa two weeks before coming to the hospital, where he was admitted August 10. His temperature was 104. He coughed and expectorated thick sputum, streaked with bright blood (his mother had died of pneumonia). He was wrapped in the wet sheet four hours. August 17, he began taking iodine, and also received enemas of spirits of turpentine. August 19, he had seven stools, for which he took ten grains of bismuth, with one-fourth grain of morphine. August 20, iodine was discontinued. The 24th, his temperature was 96, and he expectorated rusty sputa. Took half a grain of quinine t. i. d. The 25th, he had more diarrhœa, and took bismuth and morphine as before. August 30 he was well.

XIV.—J. K., æt. thirty; Bohemian; was admitted August 10. Had crepitant and subcrepitant râles over the entire lungs. Pulse 118; temperature 100. Took half an ounce of whisky and two drops of tr. of digitalis every three hours; two and a half grains of sulphate of cinchonidia four times a day. August 16, his temperature was 103.6; the 17th it was 104, and he was placed in the wet sheet. There was pleuritic friction on the right side. Took one-fourth grain of morphine three times at suitable intervals. August 22, he began to fail. Took

℞ Camphoræ.....gr. ij.
Strychn.....gr. 1-120.
Tr. digitalis.....gtt. v.
Spts. frumenti.....℥ss. M.

every two hours.

August 24 he was partially collapsed, and died the next day. No autopsy. He had propably been sick three weeks before coming to the hospital, but had no interpreter.

XV.—J. L., æt. thirty-seven; Canadian; had been sick two weeks, and came to the hospital August 24. Had lost the use of his left leg by a white swelling of the knee, when fifteen years of age. Had diarrhœa a part of the previous winter, and in June. Temperature and pulse on admission were nearly normal, and he was discharged well August 28.

REMARKS.

These fifteen cases were the first of a series of forty-five which the reporter surveyed, with about the same results. The fever mixture consisted of about eight drops of aromatic sulphuric acid, two and a half grains of sulphate of cinchonidia, a drachm of syrup, and half an ounce of water. The sulphate of cinchonidia seemed fully as good as quinine, and was much cheaper. The cold wet sheet seemed to be by far the readiest and best means of controlling high fever, and whenever the temperature reached above 102.8 an oil cloth was spread over the bed, the patient was placed on it stripped, and covered with a wet sheet, just dipped in water as it came from the hydrant. The sheet was renewed every fifteen minutes, until the temperature had come down to 100 or lower. This would take from half an hour to four or five hours.

By inquiring of the leading physicians in Chicago, it was found that they all used the mineral acids and quinine, giving large doses of the latter when the fever rose, but the wet sheet seemed not to have been used in private practice. The reporter used aromatic sulphuric acid, five drops, and sulphate of cinchonidia, two and a half grains, every three hours with good results in a dozen cases of typhoid fever, and the same proved a valuable remedy in controlling chronic diarrhœa. The iodine treatment, tried in several cases, gave a good result, except in a few where it was stopped on account of vomiting.

Society Reports.

ARTICLE VIII.

CHICAGO BIOLOGICAL SOCIETY. Stated Meeting, February 1, 1882. Dr. C. Fenger, President, in the Chair.

The President presented a report of six cases of aneurisms, an abstract of which follows:

I.—The first was a case of traumatic and popliteal aneurism, in a man æt. thirty-five. On the Fourth of July he was shot in the left popliteal region. The wound was small, and caused but little hæmorrhage, but there was severe pain and difficulty in walking. On examination, the popliteal space was found swollen, there was the ordinary pulsation of aneurism, and a bruit was audible.

July 5 the patient was anæsthetized, an Esmarch's bandage rolled up the thigh, and Dr. Fenger made an incision into the popliteal space, following a probe which had been introduced into the bullet wound as far as the anterior head of the gastrocnemius. The ball, caliber 32, was removed, and it was found that the popliteal artery had been perforated twice. This having been ligated, the wound was dressed antiseptically. The whole operation had been done according to Lister's method.

July 6, the temperature was 102.1, and moist gangrene set in. Dr. Fenger proposed amputation at middle of the thigh, but the patient refused, and gangrene extended upward.

July 8, amputation was made at the upper third of the thigh, but gangrene continued in the stump. Patient died at nine P. M. the 10th.

Professor Fenger said it was conservative surgery to apply a ligature as he had done in this case; that is, it agreed with the

latest works on surgery, although immediate amputation was recommended by a few. Cases like the latter rarely proved successful. It has been advised to ligature the femoral artery, and the femoral vein also, in order to avoid gangrene. The doctor believed a simultaneous ligature of both vessels was advisable, but he could not explain why gangrene would be thus less likely to occur, although such was the case.

II.—The second case was also that of a man, and involved the left popliteal artery. March 17, 1880, the patient applied for treatment, the aneurism having increased for six weeks previous. Dr. Lee tied the femoral artery, and the patient did well, but on June 15 the aneurism returned. An elastic bandage was applied, but the tumor enlarged till July 20, when it was seven inches in length.

Dr. Fenger then operated antiseptically, and a dark fluid was removed from the sac of the aneurism, whose walls were those of the popliteal space. There was profuse hæmorrhage. He ligatured the popliteal artery, checking capillary hæmorrhage with a solution of chlorate of zinc, and introduced a drainage tube.

September 20, the aneurism had healed.

October 19, patient was discharged.

March 25, 1881, the extension of the limb was not perfect, on account of the large cicatrix, and there was some œdema about the foot; patient otherwise well.

III.—Aneurism of external iliac. Patient, a man, twenty-five years of age, had a neuralgia in his left foot for a year previous to April 20. On the latter day, while pulling on his boot, he felt some pain about Poupart's ligament, and soon a pulsating tumor made its appearance in the left groin. On examination, it was found to be three inches long and two inches wide, and was accompanied with the ordinary bruit. July 10, dry gangrene attacked some of the toes. Incision was made July 12, and the external iliac was ligatured. July 14, the gangrene had reached the malleoli. July 20, the wound in the groin had healed, but gangrene had advanced to the knee, and some hæmorrhage took place. July 26, hæmorrhage increasing, Dr. Fenger ligatured the common iliac. There followed much pain, delirium, and gan-

grene advanced above the knee. No line of demarkation had formed. Patient died the 29th.

Autopsy.—A clot had formed in the left common iliac; the catgut ligatures were absorbed, all but the knots, and arteritis deformans had set in in the arteries. Calcareous changes had taken place in the profunda femoris.

Complete recovery was not to be hoped for in cases like the above. Amputation had been justifiable after a line of demarkation had formed.

IV.—Aneurism of the head. Patient; male; æt. twenty-six. When a little boy, a small tumor formed at the anterior fontanelle. When fourteen years old, the tumor, then the size of a walnut, ruptured, and healed again, but the aneurism enlarged till he was twenty years old, when it was the size of the hand. It increased afterward, giving rise to little inconvenience. July 2, 1879, it ruptured, and a profuse hæmorrhage took place. August 2, the right common carotid was ligatured, with improvement in the aneurism. August 17, the left common carotid was also ligatured; patient stopped breathing, but afterward revived. Aphasia and difficulty in deglutition followed. August 20, extirpation of the aneurism. August 21, transfusion of blood into the patient. August 24, temperature was 104, and ulceration was taking place in the wound. August 25, patient died, with a temperature of 106. No autopsy. Septicæmia had caused death. This had been an unusually desperate case, especially on account of the spontaneous rupture of the aneurism.

V.—Traumatic aneurism of the carotid artery. The patient, a man, was shot in the cheek, near the margin of the orbit. On examination, Dr. Lee found the jaws closed, difficult deglutition, and swelling of the tonsils. Eight days afterward the patient was able to go out, but there was much pain in the right side of the neck; tonsillitis. A swelling appeared on the hard palate, which the doctor thought might be the ball. On opening into it, it proved an aneurism. Much hæmorrhage followed, and the patient died on the spot.

Autopsy.—Dr. Fenger, on opening the neck, found pus at the bifurcation of the carotids, some old and also some recent clots of blood, and an inch above, the artery had been perforated by

the ball, caliber 32, which was found impacted in the sphenoid bone. This case was one of rare occurrence, and difficult in its diagnosis.

VI.—Aneurism of upper part of vertebral artery.

G. K., æt. nineteen, was shot in the back of the neck January 6, 1881, with a 32 caliber ball. There was swelling in the parotid region. The wound was two inches behind the mastoid process, and severe pain was felt at the left angle of the lower jaw. January 11, the wound was dressed, and some pulsation was observed. January 15, a tumor made its appearance on the outside. Dr. Lee ligatured the left common carotid artery. Patient's temperature at one time reached 103, but improvement afterward followed.

February 1, patient appeared in court, had to talk a good deal, and returned to the hospital much worse. Pulsation returned behind the left mastoid process of temporal bone, and iodide of potassium, with ergot, were administered, but the aneurism increased. February 9, Dr. Fenger tried to ligature the arteries supplying the tumor, together with other tissues, but he had to make a free incision two and a half inches long, much hæmorrhage following. Splinters of bone were felt at the bottom of the wound. He removed the upper fourth of the sterno-cleido-mastoid, found that the aneurism was supplied by the vertebral artery, and ligatured the latter. Artificial respiration had to be resorted to, and eight ounces of defibrinated blood transfused into the patient. Pulse was 150 a minute. Patient rallied. February 17, the drainage tube was removed. Patient was well March 15, but a full motion of the head did not return until August.

In order to diagnosticate an aneurism of the vertebral artery, it was necessary to compress the latter over the carotid tubercle of the cervical vertebra. External compression of the artery, in one reported case, ended in a cure of the aneurism.

Prof. Fenger advised, as a conclusion of his paper, an early ligature of the arteries and removal of aneurisms. He did not believe in acapuncture or galvano-puncture, and thought that coagulation thus induced was not always desirable.

Dr. B. Bettman read an inaugural paper on "The Condition

of the Eyes in two fatal cases of Pernicious Anæmia," an observation made by him in the Pathological Institute of Heidelberg.

I.—The first case was that of a female, æt. thirty-seven, whose blood, in June, 1880, contained 1,298,600 red corpuscles in each cubic millimeter. It contained also microcites and porculocites in large numbers. She died August 25. The appearance of the eyes was this: both papillæ were pale, the fundus was paler yet, and venous pulsation was observed on the papillæ. Small retinal hæmorrhages appeared in the right eye July 15. July 23, new hæmorrhages appeared, while the old ones had disappeared. They now made their appearance in the left eye, and could be referred to repeated vomiting. Under the microscope the stump of the optic nerve appeared normal, the retina was œdematous, and transudation had taken place in it. The axis fibers of the nerves were œdematous. The membrana limitans had been perforated at the seat of the hæmorrhages, and the rods and cones destroyed. Clots had formed between the retina and the choroid, probably at the time that vomiting had taken place.

II.—The second case, J. P., æt. forty-four, had been sick since the 14th of May. Spleen and liver enlarged. Painful spots were felt over the bones. Died June 25.

Examination of the eyes: Extravasation and hæmorrhages took place; white plaques appeared and disappeared; hydrops of the sheath of the left optic nerve was found, together with hæmorrhages, as in the preceding case. The right eye was similarly affected. There was serous transudation, especially in the neighborhood of the papilla. Varicose nerve fibers extended into the vitreous humor.

The preceding are but a few notes from the doctor's paper, which was a brilliant and masterly contribution to the disease under consideration. He was elected a member.

THE spray has been abandoned by many surgeons, and even Mr. Lister has spoken in qualified terms of its necessity; and had we to prophesy instead of to record accomplished facts we might venture to predict an early abandonment of this cumbrous addition to a surgeon's armamentarium.—*Med. Press and Circular.*

Domestic Correspondence.

ARTICLE IX.

NEW YORK, FEBRUARY 3, 1882.

EDITORS MEDICAL JOURNAL AND EXAMINER:—The assertion having been made in various quarters that the *Journal of Nervous and Mental Diseases*, heretofore edited by Dr. J. S. Jewell, of Chicago, and of which for the past five years we have been the publishers, has been "sold out" or discontinued, we desire to state to the medical profession that there are no grounds for any such statement. There has been no break in its publication, no intention to discontinue it, and no announcement of any such intention. Dr. J. S. Jewell having been compelled on the ground of ill health to resign the editorial management, has transferred the same to Dr. W. J. Morton, of this city. He continues, however, as an associate editor, to give to the *Journal* the service of his long professsonal and editorial experience. In addition to Dr. Jewell, the editor has secured the coöperation, as associate editors, of Drs. Seguin, Hammond, Bannister, Clymer and Ott, and the *Journal* gives every promise, under its present able management, of widely extending its work and influence.

By giving this note a place in your pages, you will oblige,

Yours respectfully, G. P. PUTNAM'S SONS.

ARTICLE X.

JANUARY 26, 1882.

MESSRS. EDITORS:—I see an article in your journal by Dr. Rosencrans, in reference to a case of epilepsy cured by enucleation of an eye. I think it was in 1878 I reported such a case

in the *Louisville Medical News*. The woman had had fits since an injury to right eye, caused by a blow from a chip of wood. I suspected the eye as the cause, and advised an enucleation, to which she submitted, having tried all other remedies without relief. She had averaged one fit per day for several years. You can imagine her condition. I gave her ether, and while under its influence—or rather while recovering from its influence—she had ten or twelve of the most severe attacks of epilepsy I ever saw. Her head and heels almost touched. After she entirely recovered from the anæsthetic, she never had another. The "aura" appeared to her to originate in the eye. The eye was thoroughly degenerated. Synechia anterior; lens absent. Bone in choroid. Nerve with a glaucomatous excavation.

She was under my observation for two years afterward, and reported entirely well. The case was of great interest at the time to me. Have heard of several similar ones since. She took no medicine after the eye was enucleated.

Respectfully,

W. CHEATHAM, M.D.

315 W. Walnut St., Louisville, Ky.

OLD JOURNALS WANTED.—Dr. A. B. Judson, a gentleman of superior attainments in joint diseases, residing at No. 129 East 17th street, New York City, wishes very much to obtain the following back numbers of the CHICAGO MEDICAL EXAMINER, viz: September and December, 1860, and June, July and October, 1861. He will pay six dollars for the two volumes referred to, or one dollar each for the particular numbers above mentioned. Dr. Judson is a most worthy member of our profession, and any one able to supply him will confer a favor by writing him at the above address.

E. ANDREWS, M.D.

Reviews and Book Notices.

ARTICLE XI. — AN ELEMENTARY TREATISE ON PRACTICAL CHEMISTRY AND QUALITATIVE INORGANIC ANALYSIS. By FRANK CLOWES, D.S.C., London. With Illustrations. From the Third English Edition. 12mo, cloth, pp. 372. Philadelphia: H. C. Lea's Son & Co. 1881.

The author says in his preface: "The book is especially intended to furnish a course of instruction in practical chemistry in the laboratories of our public and other schools." This aim has been successfully attained. The treatise is also adapted for medical and university students, and is essentially practical. The faults of such a work consist in separating qualitative from quantitative analysis, which should be studied together preferably, and in confining its domain to inorganic substances only. Thus a student might be proficient in his study, yet he would not deserve the title of analytical chemist, after thus cutting the matter to one-fourth.

This is a fault manifested in many scientific books, however, and is a division of labor which may have its usefulness, after all, especially if other branches have been partially looked into by the specialist.

The book is well printed, and the illustrations (of instruments mainly) are well executed. A large part of the volume consists of tables, which, although presenting the subject in a condensed and comparative form, are very intricate, and must be rather unattractive for most students.

ARTICLE XII.—PHYSIOLOGICAL LABORATORY, HARVARD MEDICAL SCHOOL, Boston. Collected Papers, 1873–1879. For Private Circulation. 8vo, cloth, about 150 pages. Illustrated with Photographs, Wood-cuts and Diagrams.

Many valuable physiological experiments are described in this book, which begins with a prize essay by C. H. Williams, A. B., "Experiments on the Action of Bile in promoting the Absorption of Fats," and one "On Intestinal Digestion," by G. M. Garland, which also received the prize of the Boylston Medical Society.

In a valuable series of experiments, O. L. Walton shows that the epiglottis is of little account in deglutition, but that its main function is in regulating speaking and singing.

Several contributions by Dr. H. P. Bowditch are contained in the same volume, which will prove more valuable to authors and professors than to practitioners.

ARTICLE XIII.—HANDBOOK OF CHEMICAL PHYSIOLOGY AND PATHOLOGY, WITH LECTURES UPON NORMAL AND ABNORMAL URINE. By VICTOR C. VAUGHAN, M.D., PH.D. Third Edition. Revised and Enlarged. Contains an Appendix of Twenty-six Plates, illustrating the Chemistry of the Urine. 8vo, cloth, pp. 351. Ann Arbor: Ann Arbor Printing and Publishing Co. 1880.

This manual contains but very little original matter, yet it presents a tolerably good résumé of the researches on which this new science is based, and is entirely practical.

The pathological part is mainly concerned with urine analysis, and does not justify the title of the book. In fact, more than half of it treats of the urine. The plates, most of them copied from other text-books, are very good indeed; the text is clear and well printed, and the binding substantial. More investigation into the chemical changes attending fatty degeneration, cancers, infectious diseases, and various tissue metamorphoses, would augment materially the value of such a work for students and practitioners.

ARTICLE XIV. — A HANDBOOK OF VERTEBRATE DISSECTION. By H. NEWELL MARTIN, D.S.C., M.A., M.D., and W. A. MOALE, M.D. Part I. How to Dissect a Chelonian. 12mo, cloth, pp. 94. New York: Macmillan & Co. 1881.

Our readers will probably remember that Dr. Martin, Professor in Johns Hopkins University, was the joint author of the valuable little book known as Huxley's Biology.

The book now under consideration treats of the dissection of a mud turtle, also known as terrapin; and two other volumes, treating respectively of a pigeon and of a rat, will soon follow. A plate of four figures, representing the skull, accompanies this volume, which, in our opinion, ought to have been well illustrated, since anatomy is so difficult a subject, especially for beginners. Two main defects will be noticed on using this book, (*a*) no measurement of organ or of skeleton is referred to, and (*b*), the relations of the anatomical parts of the turtle to the corresponding parts of man, and to those of animals lower in the series, which is not alluded to. The oft-repeated words notice, observe, remark, are of far less value than they seem, for any student undertaking to dissect a mud turtle is usually endowed with a natural faculty of observation. As this is a new departure in anatomical study, however, and intended as a help to students, we believe that it is to be commended; and at the same time, the authors are highly qualified for the present undertaking.

ARTICLE XV.—THE PRINCIPLES OF MYODYNAMICS. By J. S. WRIGHT, M.D., Professor of Surgery, and Lecturer on Physical Science at the Long Island College Hospital. 12mo, cloth, pp. 162. Illustrated with Twenty nine Diagrams. New York: Bermingham & Co. 1881.

At first sight, this work recalls the Pleurodynamics of Dr. Garland, and one expects to find in it the *causes* of contractions in muscles, a subject which has given rise to a good deal of discussion of late; or, at least, the weight under which muscles would break, etc.; but there is no dynamics about this book; it is simply the mechanism of lever-action in bones and muscles, illustrated by a great many diagrams. The book may not prove useless, however, for, as the author says in his preface: "The

better the surgeon understands the principles of myodynamics, the better he can treat fractures, dislocations and deformities"—other things being equal, of course.

ARTICLE XVI.—THE WILDERNESS CURE. By MARC COOK, Author of "Camp Lon." 12mo, cloth, pp. 153.

The author is not a physician, but his ideas seem well grounded, and are sustained by many prominent physicians in New York, who praise the Adirondack mountains as a most valuable resort for consumptives. This little book is interesting, and well adapted for any visitor to the northern part of New York State. Besides its picturesque scenery, and the great contrast which the Adirondack country offers to the residents of New York City, it is more than doubtful whether it should be recommended as a health resort. A personal investigation of the matter has led the reviewer to believe that no advanced case of phthisis could be benefited by visiting such a barren tract of land, exposed, as it is, to the most sudden changes of temperature. However, the proximity of the Adirondacks to Saratoga; their wilderness, contrasted with so many large cities all around, probably make it the best summer hunting ground, and a most beautiful country in which to spend a vacation, especially whenever health fails the Eastern student or business man.

ARTICLE XVII.—THE ESSENTIALS OF ANATOMY. By WILLIAM DARLING, M.D., F.R.C.S., and AMBROSE L. RANNEY, A.M., M.D., 8vo, cloth, pp. 629. New York: G. P. Putnam's Sons. 1880.

This voluminous "Essentials" is intended as an accompaniment of Gray's Anatomy, or other large text-book, whereby the memorizing of anatomical facts and names can be facilitated. Thus, it contains tables enumerating the muscles cut in various amputations; colored diagrams to help the student in remembering the course of the circulation! the total number of muscles supplied by any special nerve in each particular muscular region, and a number of other similar intricacies, which make the study of anatomy so difficult, and necessarily so impractical.

It is well that the authors, in their preface, anticipated the

poor reception which their work would receive at the hands of the critics. If they had condensed their material into a book of 200 pages, by cutting the blanks as far as practicable, and had it printed in smaller type, most students would probably welcome it. But as it is, it will remain better known as the cause of an important law-suit regarding the rights of a lecturer to his lectures, than as a valuable volume.

ARTICLE XVIII.—THE THERAPEUTICS OF GYNÆCOLOGY AND OBSTETRICS. Second edition, thoroughly revised and greatly enlarged. Edited by W. B. Atkinson, A.M., M.D. 8vo, cloth, pp. 571. $4. Philadelphia: D. G. Brinton. 1881.

The number of authors quoted being 422, and the number of formulæ 500, it is clear that the subject is exhaustively treated. In fact, this is a sort of encyclopædia, forming with "Modern Medical Therapeutics" and "Modern Surgical Therapeutics" the best collection of prescriptions ever made. And this is the main recommendation of these works. The book under consideration is especially adapted for those practitioners who are unable to construct their own prescriptions, or too busy to study the late works on Therapeutics; but it would be more likely to mislead students than impart the necessary knowledge of the subjects treated in such a vague manner. It is useless to add that no physician of ability ever copies the formulæ of others; and upon inquiry we generally find that the prescriptions thus purporting to be the favorite formulæ of professor so and so, have been used by him but occasionally, for all physicians vary their medicaments according to the circumstances of the case.

However, the numerous quotations which fill up this volume are entirely modern, and the editor seems to have spared no pains to make the work as useful and as practical as could be.

ARTICLE XIX.—PATHOGENETIC OUTLINES OF HOMŒOPATHIC DRUGS. By Dr. Med. Carl Heinicke, Translated from the German, by Emil Tietze, M.D. 8vo, cloth, pp. 576. New York and Philadelphia: Boericke & Tafel. 1880.

The author remarks that the registration of symptoms in the present work has been arranged according to the *anatomico-phy-*

siological schema. Indeed, homœopathy is undergoing quite a metamorphosis of late. However, Dr. Heinicke prides his *school* on the discovery that some inert substances homœopathically pre pared, develop effects of great practical value (in homœopathic practice alone, we suppose). Marble, charcoal, carbonate of magnesia, graphite and quartz, written in Latin, are the substances alluded to. But we may add that they are seldom used by our confreres, who rely more on mercurials, opiates, quinine, and aconite than we regulars sometimes do, as we know from homœopathic physicians themselves.

If the book was not one of the productions of the new school, we should feel obliged to say that it is the silliest work ever written on therapeutics. However, when the author vouches for the millionth dilution of one grain of carbonate of lime, and the shaking of the contents with *two powerful strokes of the arm*, which number used to be ten as patented at first by Hahnemann, we are struck with awe, and veneration. We highly recommend the book to all of the homœopathic fraternity, and expressly recommend them to add the word homœopathic after their name; for this is not the profession of medicine, it is the application of certain drugs to certain symptons, while *we* profess to study and treat diseases on rational principles.

ARTICLE XX.—A TREATISE ON THE DISEASES OF THE NERVOUS SYSTEM. By WILLIAM A. HAMMOND, M.D. With 112 Illustrations. Seventh edition, rewritten, enlarged and improved. 8vo, cloth, pp. 930. New York: D. Appleton & Co. 1881.

Professor Hammond is one of the most remarkable physicians who have ever adorned the profession in America. His immense, original and careful investigations, have obtained for him a reputation which will be everlasting. But his very originality, while it has given him such a reputation in Germany, and the honor of so many quotations in Ziemssen's Cyclopædia, has made him many enemies in this country. In fact, Dr. Hammond seldom misses a chance to come before the public, be it to criticise the attendants of the late president, or to defend Dr. Beard and hypnotism. But this is a necessity of the times, when good writers have to make their own way, and look for a living besides.

We always heard or read Dr. Hammond with interest and pleasure, not to say with enthusiasm. His work on Nervous Diseases as now presented in its new form is entirely one of the best text-books on the matter, and we recommend it highly to students and to practitioners as well. The fact that this is the seventh edition in ten years, would of itself be the best recommendation. Besides strictly nervous diseases, this work also treats of hydrophobia, exophthalmic goitre, syphilis of the nervous system, plumbism, alcoholism, bromism, hydrargism and arsenicism, besides the diseases of the sympathetic nervous system.

ARTICLE XXI.—A PRACTICAL TREATISE ON NASAL CATARRH. By Beverly Robinson, A.M., M.D. 8vo, cloth, pp. 182. New York: William Wood & Co. 1880.

This little monograph, notwithstanding its deficiency in some respects, will be welcomed by the profession. It is brief, carefully prepared, and contains a number of useful hints, directions and prescriptions, which have the advantage of being entirely practical.

Here are some of these formulas. In the way of local applications to the inflamed mucous lining, in acute coryza, the author highly recommends:

℞ Pulv. fol. belladonnæ.....gr. xx.
Pulv. morphiæ sulph.....gr. ij.
Pulv. gum acaciæ.....ad. ℥ss.

M. S. Use with the powder blowers for anterior and posterior nares.

The next is a formula for internal use:

℞ Potass. citratis,
Syr. ipecac.,
Tinct. opii camphor.. .....aa ʒij.
Syrupi acaciæ ... . ℥i
Aquæ.....ad ℥ij

M. S. A teaspoonful every hour and a half or two hours.

As a substitute for some mineral water, to move the bowels, the author gives:

℞ Magnesii sulph.....℥ss. to ℥j
Magnesii carbon.....ʒss.
Syrupi limonis.....℥ss.
Aquæ menth. piperitæ.....ad ℥j.

M. S. To be taken as a dose.

In chronic coryza, the following powders blown through the nostrils posteriorly and anteriorly are beneficial.

℞ Pulv. iodoform.....3ij
Pulv. camphoræ.....3i.
Pulv. acid tanniæ.....gr. v.
Pulv. g. acaciæ.....3ij. M.

℞ Hydrarg. chlor. mitis.....3i
P. sacch. alb.....3ij.
P. morphiæ sulph.....gr. j.
P. bismuthi subnit.....3ij. M.

ARTICLE XXII.—LECTURES ON THE SURGICAL DISORDERS OF THE URINARY ORGANS; Delivered at the Liverpool Royal Infirmary. By Reginald Harrison, F.R.C.S. Second edition, considerably enlarged. London: J. & A. Churchill. 1880.

These lectures are illustrated with eight lithographs, and thirty-eight wood-cuts. By far the larger part of these lectures have been taken up with stricture of the urethra, and calculi in the bladder, with their numerous complications. These subjects are treated in a masterly manner, and will well repay a careful study by surgeons who have occasion to meet these affections often. The few cases reported, give the work still greater value, and it is needless to remark that it is entirely practical.

We are glad to hear Dr. Harrison raise his voice against a mere splitting instead of removal of the prepuce, when circumcision is necessary. Not only are the *angles* left inconvenient, but they are a disfigurement which will generally remain as an index of former venereal disease.

On the whole, these lectures are quite a valuable contribution to the literature of the subject, and represent a vast amount of personal experience. As to the appearance of the book, the printing and the binding, it is inferior to the average medical book published in the country.

ARTICLE XXIII.—A TREATISE ON FOOD AND DIETETICS. By F. W. Pavy, M.D., F.R.S. Second edition. 8vo, cloth, pp. 402. Forming the August No. of Wood's Library for 1881.

One of the most valuable books in the series. The intrinsic value of four such works more than repay for the money paid on the whole. In fact, although Wood's Library is not composed of the best text books, it nevertheless inaugurates a new era in the

publication of medical treatises, and enables the poorest practitioners of medicine to have a complete library at their command for the small sum of little more than one dollar a month.

Dr. Pavy, in his introductory remarks on the dynamic relation of food, brings the subject down to the latest discoveries of modern science, and treats it in a masterly manner, except that he overlooks the "adulteration of food," which is not unimportant in this age, and the means of detecting various adulterations ought to have been mentioned at least.

The numerous analyses of various foods, their work-producing capacity, and various other considerations are of the highest practical value. On the controverted subject of beef-tea, the author expresses himself in these words: "Beef-tea represents a highly nutritive and restorative liquid, with an agreeable flavor," but the true position of Liebig's extracts of meat, is scarcely that of an article of nutrition. If not truly of alimentary value, the preparation, nevertheless, appears to possess stimulant and restorative properties which render it useful in exhausted states of the system.

The chapter on "animal foods sometimes but not ordinarily eaten," is full of curious accounts of cannibalism, of dirt-eating habits, of odd favorite dishes, and things not generally known on that subject; representing a vast amount of literature.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of Old Age. Charcot. Medical Library, Wm. Wood & Co., 1881.
Practical Normal Histology. By T. Mitchell Prodden. New York, Putnam's Sons.
Diseases of the Eye. By Henry D. Noyes. New York, Wm. Wood & Co. Library, 1881.
Organic Materia Medica. John M. Moich, Ph.D. Henry C. Lea's Son & Co., Philadelphia, 1882.
Nervous Diseases. By A. McL. Hamilton. H. C. Lea's Son & Co. Philadelphia.
Illustrations of Dissections. Ellis. Wm. Wood & Co. Medical Library 1882.
Diseases of Women. Edis. London. H. C. Lea's Son & Co., Philadelphia.
International Encyclopædia of Surgery. Vol. I. Wm. Wood & Co., New York. W. T. Keener.
Sympathetic Diseases of the Eye. L. Manthuer. Wm. Wood & Co.
A Manual of Ophthalmic Practice. Henry S. Schell, Philadelphia. D. G. Brinton.
Essentials of Practical Medicine. Hartshorne. H. C. Lea's Son & Co. Philadelphia. Jansen, McClurg & Co.

Original Translations.

ETIOLOGY AND PROPHYLAXIS OF TUBERCULOSIS. By AUSTIN C. RAMSAY, Chicago.

Tuberculosis is a contagious, infectious, parasitic, non-hereditary disease. This will surely find many skeptics, but such is the view admitted to-day, by many eminent physicians in France and abroad, and is taught at the Paris Medical Faculty, by Dr. Bouchard, professor of general pathology. This view of the matter is destined to make a great revolution in the therapeutics of tuberculosis. We will call attention here to the considerations on which the new doctrine is based, and to the objections which it suggests, then we will look for the practical consequences resulting therefrom.

The most important argument in favor of the contagiousness of tuberculosis, lies in the possibility of transmitting the disease by the inoculation, or ingestion, of tuberculous matter. Although the infectious agent, the tubercular germ, be yet unknown (though Klebs and Eklund thought they discovered in the expectorations and in the lung cavities of the tubercular patients a special microphyte) the possibility of positive inoculation is none the less demonstrated.

To Dr. Villemin's experiments, the results of which were received with scepticism, soon were added Toussaint's experiments. He inoculated into hogs lymph taken from the muscles of tuberculous cows, and blood from phthisical soldiers, and started in the hogs, which are but slightly liable to the disease, well-marked tuberculosis.

The same results were obtained on dogs and rabbits. In the human species, the tubercles are transmissible by inoculation—at

least it seems to have resulted so from experiments made on man by physicians who, happily, are not countrymen of ours. For, not the peculiar circumstances under which they operated, nor the aim in view, would justify such harshness. The contagiousness of tuberculosis finds another important support in cases of acute granular phthisis, which affects the clinical features of infectious fevers, and are remarkable from an anatomo-pathological point of view, by the general spread of deposit.

Tuberculosis is a disease no more confined to man than charbon. It is rather the chief disease of milch cows, especially those kept in stables, which are all naturally tuberculous. Other species of animals are more liable to tuberculosis than man; rabbits, for instance, never fail contracting the disease by inoculation. The number of consumptives, it is true, is great, but it is surprising that man,—living where the microphytes abound, *quærentes quem devorent*, living on the milk and flesh of tuberculous cows, inhaling air infected with the dried expectorations of consumptives,—does not pay a larger tribute to that dreadful disease. The cause of this is that tuberculosis does not always find a congenial soil. But let the human organism be poorly protected, let it be prepared by a diathetic disease,—scrofula, for example, long convalescence, poor hygienic surroundings, physical or mental overwork, poor nourishment, moist climate, impure atmosphere,—in a word, let the microphytes find a poorly protected organism, their receptibility is created, their victory certain and their development most always fatal. But if we admit the contagious nature of the tuberculosis, what becomes of the principle, the clinical dogma, of the hereditary transmission of that disease? This is the weak point of the new theory, and the principal objection against it. Dr. Bouchard has well foreseen it. It is not the contagious disease which is transmitted to the offspring, it is the constitution which remains the same in the father and the son. The child of a man broken down by phthisis, will necessarily be a debilitated being, unable to resist the tubercular infection. The causes of tuberculosis may be divided into two: (*a*) the immediate determining and predisposing cause, residing in the infectious agent; (*b*) the occasional and predisposing cause residing in the morbid tendencies. The prophylaxis of tuberculosis equally comprises

two indications: (*a*) defend the predisposed individuals by hygienic precautions; (*b*) modify the habits of life, change the organic surroundings.

The first point is merely an addition to the ordinary prescriptions of the physician, yet a stranger to the new doctrine (sea voyages, fresh air, avoiding of excesses, etc.) Another recommendation which will seem too severe, and impossible: The careful supervision of the diet of the predisposed to tuberculosis, "the careful exclusion of any milk or meat which may contain tuberculous matter." Since all cows in stabling are tuberculous, this means a complete prohibition of milk and meat, at least in regard to the poorer classes in cities. Who will dare proclaim this, which would prove an arrest of death for so many new-born children?

As to the second point, the aim in view will be attained by living in the open air, by providing for plenty of good food, and taking the proper care of individuals. A beneficial result may also follow sulphur and salt-water baths, which are of a nature to strengthen the constitution, and increase its resisting powers. —*Revue Médicale*, July 2, 1881.

PROFESSOR PIROGOFF, whose death was lately announced, had for many years withdrawn from the active practice of his profession, and had lived on his estate in the country, where he gave his valuable advice gratuitously to the numerous patients who flocked to him from the surrounding districts. In America his name is chiefly known in connection with an amputation at the ankle-joint, in which the tuberosity of the os calcis is left in the heel flap. He was the author of a Medical History of the Crimean War, and of treatises on Orthopædic Surgery, the Surgery of Arteries, and an Atlas of Topographical Anatomy. He was the principal medical officer of the General Hospital in Sebastopol during the Crimean war, and took an active part in the introduction of plaster-of-Paris bandages.

Summary.

RECENT CRIMES.—There would seem to be some reason to fear that the progress of civilization is travelling the course of a vicious circle. Side by side with tokens of intellectual advance and moral enlightenment are to be found unmistakable evidences of the rapid and marked development of exceptionally evil quality in the natures of individuals who have certainly not been left out of the swiftly moving current of progress, but have turned its advantages to their own and their neighbor's injury.

A girl thirteen years of age (Messenger), having more than average intelligence, drowned a child committed to her charge, apparently with no stronger motive than the desire to save herself the trouble of nursing it. A young man (Lefroy) in his twenty-second year, fairly educated, if not in a certain way gifted has elaborately planned and brutally executed the murder of an old man, solely, as it would appear, to possess himself of a small sum of money to supply his immediate necessities. And perhaps for the first time in modern history, a party of young girls barely in their teens, would seem to have organized themselves as semi-professional house-breakers.

These crimes shock the moral instinct of the community, and the manner of their commission, and the bearing of the criminals after detection, occasion astonishment. Let us see whether what we think strange is not, in fact, perfectly natural—that is to say, natural to the abnormal conditions. There have, of course, in all ages and stages of natural progress and social development, been isolated instances of precocious wickedness; but we think it must be conceded, on consideration, that the story of recent crime—

from which we have cited only three of the latest examples—furnishes proof of exceptional depravity.

In truth, without adducing the detailed arguments by which we arrive at this conclusion, it may be suggested that the general effect of our high-pressure method of forcing the growth of intelligence by education, must needs accelerate the development of bad as well as good mental organizations. The sun shines and the rain falls on the evil as well as the good, and the total result must be to produce a sprinkling of preternaturally developed offences and offenders.

The psychologist who studies mind in the light of physiology—and how or where else can it be studied?—knows that it is from the evil tree we get evil fruit, and the stronger the fostering influence brought to bear on the population as a whole, the longer must be the total number of bad fruit-bearing growths which will be brought into prominent activity. Those who regard education as a panacea for all the faults of human nature, must be woefully ignorant of its power and method of working. If it leads out the good, it must also lead out the evil.—*The London Lancet*, February.

ONE UNQUESTIONABLE RESULT OF THE GUITEAU TRIAL.—At the commencement of the trial of Guiteau, there was an almost universal confidence in the popular, as well as in the professional mind, as to the judicial ability of the medical profession to diagnosticate, with reasonable certainty, the character and degrees of mental alienation presented for examination. Such has been the record and the law; such the conviction and endorsement of the medical profession; such the custom and the rule with bench and bar; while the clergy have taken such rulings as absolute, and the people have said it must be so, if the doctors have said so.

What is the conviction of the profession and of the people to-day, after giving the so-termed medical experts a fair hearing, and their testimony an honest consideration? It is that the claimed ability of the profession to determine these questions is absolutely untenable; that their testimonies, when put to the test, have been so different to the evidence expected and assumed, as to make

their claim an absurdity, and to convert their proceedings into an absolute farce.

Some of the "experts" regard insanity as a disease of the mind, the brain being sound. Some assert that insanity is a disease of the brain, the mind being only functionally disturbed. Some that insanity is not a disease either of the mind or the brain, but that it comes from without, and not from within; that it is eccentric and not centric in origin. Some believe in moral insanity. Some declare this claim to be an absurdity.

But this forensic drama as a whole, has been lamentable, pitiable and mortifying. It has made universal skepticism in regard to expert testimony in psychiatry an unquestionable result of the Guiteau trial.—*Gaillard's Medical Journal*, January.

What seems so anomalous in the testimony of the experts looks perfectly natural upon further inquiry. The study of mind, psychology or psychiatry, has not yet had time to become a science. The first work on "Comparative Psychology: Mind in the Lower Animals," by W. Lander Linsay, was published in this country two years ago, and the valuable Works of Henry Maudsley are nearly as recent. Yet, if we wish to study the biological laws which have presided over the evolution of mind in man, no work has ever been written on this subject; nothing but some suggestions made by Herbert Spencer, which assume a more important form in the speculations of Edward B. Tylor in his "Anthropology" just published. So that the assertions of most so-called experts are based on their observation of certain facts, too scanty to give rise to useful generalization, and the more worthless because the observers have no principles to be guided by. It is about time that the diseases of the mind should be studied by the profession, and treated at home if possible.

THE PROGRESS OF THERAPEUTICS.—It seems to be in the nature of scientific study to run for a time in certain special lines, to the neglect of others—first one branch and then another being pushed far out in advance of the general progress of the science, and receiving, for the time, almost the undivided attention of investigation. This has been pre-eminently the case in medicine. Anatomy, physiology, physical diagnosis, and lastly pathology,

have each in their turn almost monopolized the study of those who gave direction to medical thought.

It is only within a comparatively recent period that any systematic effort has been made to do for therapeutics what so many and such zealous workers have been doing for the other departments of medical science.

Medicines are beginning to be classified according to their primary action rather than their secondary results, and the old loose and general designation, such as stimulants, tonics, antispasmodics, evacuants, etc., are giving way to terms expressing the action upon special centres, such as cardiac, vaso-motor, cerebral, spinal, cerebro-spinal, excitants and depressants, etc. We now ask ourselves, not what is good for the disease in hand? but, what are the morbid conditions which find expression in the disease? How far are they capable of being modified by drugs? and lastly, what medicines will be best adapted to effect these modifications? This series of questions shows not only the dependance of rational therapeutics upon pathology, but also that pathology cannot be brought to the aid of therapeutics except through a knowledge of the initial action of drugs upon the several parts of the body. Thus, if our knowledge of pathology enables to determine that there is spasm of the vessels in a given part, and experimentation has taught us that a certain medicine will relax the vessels of that part, we have an exact indication for the use of that medicine such as no amount of merely clinical experience could afford us.

In a general way it has, of course, always been known that emetics act upon the stomach, and cathartics upon the bowels; that the skin is stimulated by diaphoretics, and the urine increased by diuretics; and the use of drugs with the purpose of "stirring up the liver" is as old as medicine itself. But in later times it has been found that this principle of elective action has a much wider range than was supposed, and is much more definite and exact in its application. Thus, the action of ergot upon unstriped muscular fiber makes it much more than a "parturient," and that of aconite, upon the vaso-motor centers makes it more than a simple diaphoretic or febrifuge. The specific action of the solanaceæ upon the third nerve, and of aconitia upon the fifth, of quebracho

upon the respiratory centers, and of digitalis upon the cardiac, are instances in point. Nay, sometimes special branches of a nerve are affected to the exclusion of other branches of the same nerve, as, for example, the twig to the levator palpebræ, which is paralyzed by gelseminum.

The Cartwright lectures by Professor Bartholow, along with much that is original, give an admirable summing up of what has been accomplished of late in this most interesting field (the antagonism of medicines), while Fothergill's little treatise on the same subject is full of valuable information.

Going back only so short a period as twenty years, we have had within that time many new and most valuable medicines added to our list. Among these may be mentioned the bromides, iodoform, chloral, carbolic, salicylic and boracic acids and their compounds, thymol, amyl nitrite, guarana, jaborandi, quebracho, etc. Hypodermic medication with its multiform uses, and rectal alimentation, have been added to our resources within this period.

The use of small and frequently repeated doses, which has been introduced within a few years, seems to have much to recommend t, especially in the case of drugs which are rapidly eliminated. If the action of a medicine is needed at all, it appears more reasonable that it should be sustained at a nearly even intensity, rather than that the field should be occupied alternately by the remedy and the disease.

On the whole, whether we consider the many valuable additions to our list of remedies, or the more exact knowledge which has been obtained of the action of medicines, the outlook for therapeutics is full of promise.—*Medical Record*, Feb. 11.

Necrology.

DR. CASS MASON DODGE, died at his office, corner Halsted street and Archer avenue, of diphtheria, December 20, 1881. Dr. Dodge was born at Prospect Park, Ill., in 1848, he graduated at Rush Medical College, in 1873, and practiced in Chicago for several years. He leaves a wife and two children. He contracted his last sickness from one of his patients, a peril to which each physician is greatly exposed, though the fact is never taken into account by the community.

DR. JOSIAH C. CHURCH, died February 13, 1882, at the residence of his son, Dr. Nelson H. Church, No. 17 Filmore street. Dr. Church was born in New York State, in 1815, received the honorary degree of M. D. from Syracuse University. He practiced many years in Geneva, N.Y., and twenty-two years in Patoka, Ind. Paralysis, the disease of which he died, had confined him to his bed for four years.

DR. JAMES ALLEN MEAD, died at his office, 54 S. Canal street, of typhoid fever, February 16, 1882. He was born in New York State, in 1841, and kept a drug store for sixteen years. He studied medicine in Rush Medical College, and received his degree in 1876. The few last years of his life were confined to practice. Dr. Mead had been rather successful in pecuniary matters, leaving a small fortune to his wife and two young children.

DR. DANIEL S. ROOT, died at his office, corner of Twelfth and Halsted streets, February 23, 1882, of chronic diarrhœa, probably tubercular. Dr. Root graduated in Rush Medical College, in 1867, and founded a large practice which proved very lucrative. He remained single, and died aged about forty.

Selections.

ON SEASICKNESS. By JAMES REGINALD STOCKER, M.B. Lond, M.R.C.P., Medical Officer, Cunard Line.

"Our remedies oft in ourselves do lie."
"*All's Well That Ends Well.*"

In drawing the attention of the profession, and it may be of the public, to this subject, I may state that I have been somewhat perplexed as to the most suitable and convenient means of doing so. The matter, in whatever way it may be treated, whether in a professional, a scientific, or even a popular way, is one of such common interest, people are so bewildered and distracted by the variety of remedies offered to their notice, and so much has been written about it in the daily and weekly journals on both sides of the Atlantic, that I might have been excused had I sought for the publication of my views in some popular journal or magazine. It is, at the same time, of whatever general interest and importance it may be to the public, one the nature of which must eventually be submitted to and determined by a scientific tribunal, and it is this that induces me to bring my own particular views forward at the present time. Some question also has arisen in my own mind as to whether the quotations I have made were quite as appropriate in a professional as in a popular publication. I trust, however, in whatever sense they may be read, they may prove instructive.

But, before proceeding to make any remarks upon the subject myself, I propose briefly to refer to certain statements that have been made by others. Some ten years ago, Professor Barker, of New York, wrote an able pamphlet on seasickness, which is practically an enlargement of a paper published by him in the New York *Medical Journal*, November, 1868. In this pamphlet he

says: "The belief is very general, both in and out of the profession, that the medical art is powerless for the mitigation, relief, or cure of this malady. It is true that there are no specific drugs which will cure or even prevent seasickness, but I believe that every physician ought to be competent to give such good, sensible advice as will greatly contribute to diminish the tendency to this malady, and to mitigate and relieve the suffering and evil resulting from it." He then recounts the opportunities he has had of studying the malady, and adds that he is not sure it "can be called a disease in the proper sense of the word, for the phenomena constituting seasickness are purely physical." What he means by this is not quite clear, unless for "physical" we read "functional." Further on he discusses shortly his own views of the cause of seasickness, and remarks that "no sensible physician would therefore expect to cure seasickness by medication addressed to the stomach, or even by drugs which are supposed to act directly on the brain and its functions. The horizontal position, which to a certain degree modifies this disturbance of function, is the only approximation to a cure." In cases of prolonged seasickness, constant nausea, great nervous depression and sleeplessness, he recommends the use of potassic bromide in scruple doses, three times a day. Dr. Barker has, in my opinion, written a useful little book, for one reason, if for no other, viz., that he has vaunted no particular remedy.

Sometime after the publication of Dr. Barker's views of seasickness, M. Giraldès wrote a letter to the *Times*, lauding the use of chloral hydrate as a preventive of seasickness, which attracted considerable attention at the time, and has found a popular exponent of late in the shape of a patent or proprietary medicine. This letter was published also in the French medical periodicals at the time, the *Union Médicale* and the *Journal de Thérapeutique*, November, 1874. Twenty grains of chloral were taken before going on board, and were to be repeated during the passage (the English Channel) if necessary.

A more recent writer, Dr. Wilson, of Sandown, Isle of Wight, in a book published only last year—"The Ocean as a Health Resort," London, 1880—condemns the whole *posse comitatus* of drugs as useless. He says: "Ice bags to the spine, chloroform,

chloral hydrate, prussic acid, and all the numberless remedies that have been proposed, have been weighed in the balance of experience and found wanting. Some of them," he admits, "may relieve for a time, but they interfere with the natural course of the complaint, and do more harm than good in the long run." A few lines further on he says: "When the stomach is much exhausted by sickness, small quantities of stimulants, especially in an effervescing form, will be found of great service. The best stimulants to take are brandy in small quantities, well diluted with soda water or dry champagne, either alone or mixed with soda water. When ice can be obtained, it may with very great advantage be either taken with the fluids, or allowed to dissolve in the mouth in small quantities at a time."

The Rev. Dr. Cuyler, on the other hand, in a letter published in the New York *Evangelist*, April 21, 1881, says: "Thanks to a free use every morning of Saratoga water and a careful diet, I have not been seasick. The traditional nonsense about warding off this dreaded malady by a liberal use of champagne or toddy ought to be exploded. In this case, too, 'wine is a mocker, and whoso is deceived thereby is not wise.' A good aperient, light digestible food, and fresh air are worth more than all the alcoholic potations ever concocted."

But the great modern exponent of seasickness is an American physician practicing in New York. His experience truly is great, for he appears to have been a great sufferer himself. It is curious to notice, in passing, how Dr. Beard claims to be an authority because he *is* seasick, and Dr. Barker because he *is not*. It is also interesting to observe how a system of treatment which seems almost worthy to be considered as belonging, *par excellence*, to the old school, has originated in a country which may fairly be called the "home of the homœopaths," and has been eagerly adopted, and, sometimes to their sorrow, put into practice by the public. His points are briefly these: That bromide of sodium is a specific for seasickness, that it must be used before the commencement of the voyage, and that it must be taken largely, indeed, excessively. I have examined his treatise in a spirit of careful and candid inquiry, and I must say I cannot but condemn the practice. I have no hesitation in saying that, although Dr.

Beard has been consistent and emphatic enough throughout his book in advocating the use of excessive doses of the bromide, and the necessity of commencing the treatment before going on board ship, he has, not *un ostrich-like*, most effectually and conclusively contradicted himself by a note he has innocently and ingenuously, and apparently for the purpose of confirming his theory, added to his work. This note consists principally of a letter from Dr. Hutchinson, of Providence, R. I., relating to a "combination which proved so remarkably successful. Two gentlemen, one lady, and one child were terrible sufferers with seasickness—the lady being at times delirious from functional cerebral excitement. Into an ordinary tumbler, half full of water, I put ten grains of bromide of sodium, with one-tenth grain of powdered ipecac, sat down by the bedside, and gave a teaspoonful every ten minutes. Inside of an hour all vomiting and nausea had disappeared, and the lady was asleep quietly. When she awoke, although the sea was the same as before, the sickness did not return, and she finished the voyage to Santiago de Cuba pleasantly. The same effect followed in the other cases, and as we were out almost two months, cruising around the island, I had an excellent opportunity to test this remedy. In no one instance did it fail. . . . With, I presume, more experience at sea than usually falls to the lot of physicians, this combination is the first that has proved of the smallest benefit in this contemptible disease."

I would call attention, in the first place, to the grammatical construction of this last sentence, and, in the second, to the complete refutation the letter gives to Dr. Beard's statements. It is needless to descant any further on these last two plans of treatment, except to say that the contrast between them is simply ludicrous. It is chiefly with the object of exposing the inconsistency of these and other like statements, and of calling public attention to the fact, that I venture to quote them. In addition to the popular and elegant preparations introduced of late for the relief or cure of seasickness, we may soon expect to see another, culled from the fertile brains of Dr. Beard and Dr. Hutchinson combined, and called by some such fanciful name as the proprietor may delight in and consider attractive, which may perhaps be

found exceedingly useful by those who possess those two invaluable assistants to the *vis medicatrix*, ignorance and faith.

I shall now proceed to relate my own views about seasickness, and would ask my readers to remember that hitherto I have been speaking of the treatment, about which I intend to make only a few remarks, based upon the results of my own experience and that of competent and trustworthy observers.

There are some diseases, the specific fevers for example, for which there is no cure, nor is it in the course of nature that there should be. But the system, having once encountered them, is, generally speaking, no longer liable to their attacks. The only security against such diseases is either to keep well out of their way, or, by submitting to them, to undergo what may be called a personal experience of them. There are also, it cannot be denied, certain conditions of the body which render it more or less susceptible to the influence of the poisons that engender them. They depend upon age, six, condition, occupation, temperament, habits, and the like. These conditions, when favorable, appear rather to establish a kind of tolerance than to confer complete immunity. When we look around us, we cannot fail to perceive that some individuals appear at times to possess this property; their systems are either acclimatized or accustomed, or from other causes are not susceptible, to them; at any rate, they are free.

We observe a similar kind of tolerance sometimes, indeed generally, acquired by the system with regard to the special senses, particularly in certain occupations. So it is with regard to seasickness. Can we wonder that in this case, too, the system should sometimes become inured or accustomed to the sensations that produce it, and no longer amenable to their influence? Can we be surprised that in certain cases, or at certain times, men should seem to be endowed with the faculty of accommodating themselves to the singular sensations that occur on board ship?

Having said so much by way of preface to my remarks, I may now proceed to discuss the nature or the pathology of seasickness. The pneumogastric nerve is always an interesting nerve to study; in the present inquiry it is an important one: it is the key to the explanation of seasickness! It is the principal nerve of organic life: it governs the heart, the lungs, and the stomach and intes-

tines, as well as other more remote but yet important parts. It may seem curious, but it is nevertheless a fact, that the stomach sympathizes most with the senses—the heart and lungs with the emotions, the ideas, and the intellect. If a powerful stimulus acts upon the mind, it affects principally the heart and lungs; if upon the senses, the stomach is affected. The same may be said of sedatives or soothing influences.

The pneumogastric nerve sympathizes, then, with the senses and the intellect, and plays an active part in that expression of disgust which results in vomiting. We see this thing occur as a consequence of an unpleasant impression upon any one of the special senses—the sense of taste, of smell, sight, hearing, and touch. Stimulation of the nerve, in moderation, favors digestion and the various other processes of organic life; in excess it irritates them. It directly occasions nausea, dyspepsia, flatulence, vomiting, etc.; and, indirectly, all the other sad effects of seasickness. The nervous centers, excited by the sensory impressions, become at last so irritable that the introduction of anything into the stomach is resented, and vomiting occurs; until sooner or later the nervous system is dominated by that potent influence for good or evil, the force of habit, and the body finally becomes accustomed to the new sensation.

I have spoken of a difference in the degree of stimulus: quantity. I will now allude to a difference in the kind: quality. There are some sensations that are pleasant and agreeable; others that are painful and disagreeable. It is not by any means always the case that the same sensations produce the same effect—*i.e.*, of pleasure or of pain—either in the same or in different persons —"what is one man's food is another man's poison." In other words, tastes differ; not only in different persons, but also at different times. An odor, *e.g.*, as of cooking, may be grateful at one time, ungrateful at another; a sound agreeable at one time, at another disagreeable. It is peculiarly so in regard to movement. One is sometimes pleasantly affected by a motion which at other times may be quite the reverse, and it always has a different effect upon some people from what it has upon others. I once met a man who said he had crossed the Atlantic eight times

as a bachelor without being seasick; the ninth time he was married and had his wife with him; he was sick the whole way.

The consideration of the phenomena of seasickness has convinced me that the fifth sense, commonly called the "sense of touch," or "common sensation," is a compound sense. By its means we are able to recognize not only touch and its varieties, but also distance, form, size, weight, consistence, relation, and time, and sometimes even color and sound. "The capacity, therefore, of the hand," says Sir Charles Bell, "to ascertain the distance, size, weight, form, hardness or softness, roughness or smoothness, of objects, results from its having a compound function—from the sensibility of the proper organ of touch being combined with the consciousness of the motion of the arm, hand, and fingers."—("Bell on the Hand," 8th ed., London, 1877, page 156.)

Nor is feeling by any means the only sense that is compound in its character, for all the other senses are more or less of a complex nature. Bell, indeed, may have been mistaken in his views as to the "muscular sense" being a sense apart and distinct from the others, for it doubtless properly belongs to the various special senses with which the muscles concerned are connected, the muscular apparatus of the trunk and limbs enabling and assisting them to fulfill their functions just as much as the muscular appendages of the eye, the ear, the nose, and the tongue minister to them.

This, then, is one of the lessons that the study of seasickness teaches us. It teaches us an important physiological fact, that there is in us a sense which, without some such experience, we might perhaps be slow to recognize—the sense of passive motion. It may not indeed be so exalted a sense as others, nor so important, but it is certainly one which in seasickness deserves consideration. And after all it has its pleasant as well as its painful side, when used in moderation; it is the placid sensation that often lulls the child to sleep; it is that of the rocking-horse, the rocking-chair, horse exercise, vehicular motion of all kinds, passive movement of the body in all its forms and phases, only unpleasant, only disagreeable when used inopportunely or in excess.

There is another passage in Bell's work upon the hand (p. 148)

that bears directly upon the matter we have in hand, though from another point of view; it is this: "The nurse will tell us that the infant lies composed in her arms while she carries it up stairs, but that it is agitated when she carries it down. If an infant be laid upon the arms and dangled up and down, its body and limbs will be at rest as it is raised, but, in descending, it will struggle and make efforts. Here is the indication of a sense, an innate feeling, of danger."

Considered in the light of later years, we may perhaps trace in this observation of Bell's an instance of one of the conditions of seasickness. The study of seasickness, as has been suggested, is a complicated study, and not so simple as some appear to think. Much light has been thrown upon the subject at various times and by different writers. Barker refers it to the "sudden and recurring changes of the relation of the fluids to the solids of the body, and the nervous disturbances which result from these changes. . . . The blood by its fluidity yields more readily to the influence of descent and less easily than the solids to the ascending impulse." The *Lancet* in a leading article (Oct. 23, 1875) referred to Wollaston's theory of seasickness, which attributed the symptoms to "cerebral disturbance induced by the repeated mechanical congestion of the brain, which the repeated downward movement of the ship induces;" and showed how inefficient it was to meet the case. Ellis, of Bristol, in the same number, throws out a useful hint as to the necessity of learning to accustom one's self to the movements of the ship. Wilks and Marshall have pointed out the difference of the "pitching and tossing" or "forward" movement of a vessel from the "rolling" or "lateral" movement, and how much more exaggerated it is in one case than in the other, and how much more are its effects. Conditions which these and other observers refer to the falling weight of the viscera, I am inclined to attribute to a cause a little more remote, but produced partly by that agency. I believe that the feeling of nausea, etc., which ensues upon the falling of the vessel is the same as that due to the backward movement of the swing, or of any vehicle, the downward movement of an elevator, vertical or oblique, as well as in the dance and in the infant just referred to; and is brought about by the formation of a partial

vacuum in the lung. To this cause I also attribute the condition known as *mal des montagnes*, which has been well described by M. Lortet, of Lyons ("Comptes Rendus de la Soc. des Sci.," 1869, 2, p. 707), who, by the by, ascribes it to the cooling of the body and the vitiation of the blood with carbonic acid. Dr. Macpherson (*British and Foreign Med.-Chir. Review*, 1876, p. 2. 279) gives a good account of this and other observations on the same condition. He sums up the symptoms thus: Quickened breathing and pulse, and bleeding at the nose, etc., "violent headache, sleeplessness, loss of sense and of memory, mental depression, thirst, nausea, vomiting, loss of power in the limbs. All these symptoms," he says, "remit on rest, but return on renewed exertion. All are not affected alike. . . . The amount of suffering varies in the same person at different times. . . . Those who make the most exertion suffer most. Those who are on horseback suffer less than those on foot. The lower animals are affected as much as man."

We have in seasickness conditions almost precisely similar to these, with regard to the effect as well as to the cause; a certain rarefaction of the air within the chest; a partial vacuum produced, not indeed by the rarefaction of atmosphere itself, but by the subsidence of the abdominal viscera when the vessel falls, and therefore felt more in the upright than in the horizontal position; and the continued movement of the body.

The first, *i. e.*, the want of air, is the cause more particularly of that feeling of "goneness" we so often hear complained of. I have been in the habit of recommending my patients to take a deep breath whenever they feel that sinking at the pit of the stomach, having found it by experience to be an effectual, though not infallible, means of allaying the sensation, and to this I would refer the good effect of singing or of any rhythmic movements that may tend to relieve the mind or to regulate the breathing, as well as the advantage sometimes derived from weight or pressure applied to the stomach by elastic and other belts, or bandages. Only the other day a gentleman told me he had experienced considerable relief by facing the wind and bowing forward when the vessel pitched; so many and so various are the methods men resort to in order to accommodate themselves to the change, as I

think, of the rarity of the air within the chest. The second, *i. e.*, the movement, is the cause more especially of the irritable condition of the nervous system.

The secret of the one is its direct effect upon the pulmonic branches of the pneumogastric nerve, probably the result of partial paralysis. We know that division of the pneumogastric causes vomiting; the nerve is said to exert an inhibitory effect upon the heart; it has the same effect upon the stomach. "The sensation of pain, oppression, irritation of the air passages, want of air, hunger, thirst, and satiety are dependent on this nerve. It has a regulating influence over the functions of deglutition, digestion, circulation, and respiration" (Marshall). It may, however, be due to stimulation of the pneumogastric, for the diminished resistance of the air, according to Liebig, leads to more active elastic contraction of the lung. The secret of the other is its indirect effect upon the same nerve, through the media of the nerves of feeling or common sensation, sometimes indeed through the agency of other senses, as, *e. g.*, by the sight of undulating movements, and by other unpleasant sensations. In each case, practically, the cause is of an eccentric or peripheral character.

I have said that the study of seasickness is complicated; I may now say that I recognize these two factors in its production, viz.: Irritation of the nervous centers by the ceaseless movement and other disagreeable sensations; and the sickening sensation of "want of air." I did think that my views as to the existence of the sense of passive movement being demonstrated in the case of seasickness were somewhat original; I find them expressed, however, some fifty years ago, by Herbert Mayo; and essentially confirmed by physiological writers at the present day. They tell us that seasickness is a sensori-motor act (Carpenter, Marshall), and speak of common sensation as complex, consisting of the sense of touch, temperature, the muscular sense, hunger, thirst, satiety, want of breath, fatigue, exhaustion (Marshall); but it was Mayo who was the first to recognize the fact. The index of his original observations that he gives in the preface to his work on physiology contains the following passage: "Remarks upon impressions of direction and motion; of equilibrium; hypothesis maintained of the dependence of seasickness upon the sense of disturbed equili-

brium." He explains it thus: "There is a feeling attending the sudden beginning or retardation or acceleration of motion, which is independent of the sense of contact excited on one or other of the aspects of the body, and of muscular effort. When one is in a state of equable motion, as when one lies upon the ground (there being then the earth's motion only to be taken into account), or in the perfectly smooth and uniform motion of a boat gliding down a river, we *feel* that we are at rest. Any sudden alteration of the quantity of motion in us we *feel* by the sense of motion. The existence of the same sense may be rendered evident in another manner. After traveling a short distance in a rough carriage (to the city, for instance, in an omnibus), when the carriage has stopped, and you have remained on your seat for a few seconds, if you rise suddenly, you feel, for an instant or two, as if the carriage were still in motion; this is the sense of motion *continuing after the external cause has ceased*, as the sensation produced by a flash of lightning remains in the eye longer than the light itself. It is not easy," he adds, "to say where this sense exists, whether in the muscles only, or in the joints and sinews and integuments, or in the whole frame together."

Another passage in the same work is well worth quoting here: "Nothing appears simpler or easier or more natural than maintaining our equilibrium in standing, walking, running, under common circumstances. Nor does anything appear more natural and easy than the rapid movements of the fingers of an accomplished musician playing on the piano. Both, however, are equally the results of long and at first difficult practice in the use of muscles under the guidance of more than one class of sensation. In maintaining our equilibrium we are principally assisted by the muscular sense. How much the maintenance of our equilibrium is the result of practiced sensation and muscular effort is shown by what happens on going to sea. It is long before the passenger acquires his sea legs. At first, as the ship moves, he can hardly keep his feet; the shifting lines of the vessel and surface of the water unsettle his visual stability; the different incli nation of the planks he stands on, his muscular sense. In a short time he learns to disregard the shifting images and changing motions. or acquires facility in adopting himself (like one on

horseback) to the different alteration of the line of direction in his frame."

Taking all these things into consideration; the exhausted condition of the air, the continual movement of the body, the concussion and congestion to which various organs in the body are subjected, the shaking up of the contents of the stomach, and all the unusual, unpleasant impressions that assail our other organs of special sense—the eye, the ear, the nose, and even the tongue and palate—and knowing that sickness sometimes results from any one of them, we may find it difficult rather to account for its occasional absence than to understand its frequent occurrence.

With regard to the symptoms I shall say nothing. They are tolerably familiar to most of us, and to relate them now would be to little purpose. As to the treatment, I think it lies in a nutshell. As I have said already, I propose merely to make a few general remarks upon it; not to discuss it at any length. If the views I have stated above are correct, the conclusions to be drawn therefrom are simple and obvious. Sedatives, both nervine and also stomachic (for they too will influence the terminal branches of the pneumogastric nerve), anodynes and anæsthetics, among which I include, of course, amyl nitrite, are good. So also are stimulants. Aperients are exceedingly useful. It is necessary, however, in saying this, to state that there are in this, as well as in most other complaints, certain stages or periods: the first, one of great nervous depression; the second, one of gastric and nervous irritability; the third, one of exhaustion. Things which are useful or harmless in one may be useless, and even hurtful, in another.

There are drugs which serve to diminish and even to deaden sensibility—some which serve to fortify and to strengthen it. Such drugs are no doubt of use, of much use, for the relief and prevention of seasickness; but that they are specifics I venture most directly to deny. A person's consciousness or his intellect may be so completely fuddled that he may not know what he is about; but to call that a cure is not, I venture to assert, calling things by their right names. The use of the bromides for this purpose is increasing daily, and I must say that I can not but condemn the practice of using them so indiscriminately and in such large

quantities as has lately been recommended. In the *Medical Record* for July 2, 1881, is a report of a meeting of the American Neurological Association. Dr. W. A. Hammond, of New York, is reported to have said that "he had seen many cases in which acute mania had been produced with bromides, and he believed that there was a stage beyond which bromides could not be continued without producing mental aberration. The cumulative properties of the bromides should be studied more carefully than they had been. He had had four patients die while under the extensive use of bromides under his direction."

But, while I deny that there is any specific remedy or panacea for the disorder, I hasten to acknowledge that many of the conditions may be relieved by medicine. Seasickness, after all, is but a form of passive indigestion, the result of a functional neurosis in which the pneumogastric nerve is either excited or depressed. Like many other functional disorders, if anything is to be done at all for it in the way of medicine, it requires to be *treated*. One is sometimes surprised at the complete failure in some cases of a remedy which in others has proved of great service; and conversely, one is sometimes charmed with the effect of a remedy on some which has failed completely with others. With regard, for instance, to the use of alkalies as stomachic sedatives, one seems sometimes to hit upon by chance, to distinguish intuitively, or rather, perhaps, to learn by experience, what particular drug to use in each individual case. The same may be said with regard to aperients, etc. Thus would I explain the differences and agreements in the opinions of writers who have given the results of their experience to the public.

One cure, indeed, there is, viz.: custom or habit. In the course of time it almost invariably asserts itself, and "use becomes a second nature." The sooner one can accustom or habituate one's self to the altered conditions of things, the sooner will one become a good sailor. The best means of doing so is to forget it, to banish it from one's memory by the substitution of gymnastic and other exercises, and by learning the art of balancing one's self. The more one is able to forget one's self, the more one's attention can be distracted from one's own condition and diverted to other things and other people, the less will one feel the disagreeable sensation

What people want on board ship is resolution, and when the will is not sufficient and moral means have failed, the most effectual, though not by any means the most practicable, is to have recourse to force.

Captain Marryat was of this opinion, as the following passage from "Peter Simple" will conclusively show: "I admired the scenery of the Isle of Wight, looked with admiration at Alum Bay, was astonished at the Needle Rocks, and then felt so very ill that I went down below. What occurred for the next six days I can not tell. I thought that I should die every moment, and lay in my hammock or on the chest for the whole of that time, incapable of eating, drinking, or walking about. O'Brien came to me on the seventh morning, and said that if I did not exert myself I never should get well, that he was very fond of me, and had taken me under his protection, and to prove his regard, he would do for me what he would not take the trouble to do for any other youngster in the ship, which was to give me a good basting, which was a sovereign remedy for seasickness. He suited the action to the word, and drubbed me on the ribs without mercy, until I thought the breath was out of my body, and then he took a rope's end and thrashed me until I obeyed his orders to go on deck immediately. Before he came to me I could never have believed it possible that I could have obeyed him; but somehow or another I did contrive to crawl up the ladder to the main deck, where I sat down on the shot racks and cried bitterly. What would I have given to have been at home again! It was not my fault that I was the greatest fool in the family, yet how was I punished for it! If this was kindness from O'Brien, what had I to expect from those who were not partial to me? But, by degrees, I recovered myself, and certainly felt a great deal better, and that night I slept very soundly. The next morning O'Brien came to me again. 'It's a nasty slow fever, that seasickness, my Peter, and we must drive it out of you;' and then he commenced a repetition of yesterday's remedy until I was almost a jelly. Whether the fear of being thrashed drove away my seasickness, or whatever might be the real cause of it, I do not know, but this is certain, that I felt no more of it after the second beating, and the next morning when I awoke I was very hungry."

I may add that this is a mode of treatment perfectly well known in the merchant service, and found to be of inestimable value even at the very commencement of the complaint.—*New York Medical Journal.*

IN WHAT CASES SHALL THE MEDICAL EXAMINER DECLINE TO VIEW A DEAD BODY? By Medical Examiner ALFRED HOSMER, M.D., of Watertown.*

The medical examiner forms a conspicuous and important element in that vast system of protection which it has been found necessary to establish for the community. In one of his relations to the public he is, but in no menial sense, a servant, and as such he should be willing, prompt and obedient. With this idea in mind I have never failed to report for duty whenever a requisition has been made for my official services. Yet it has sometimes happened that after reaching the place where immediate action on my part was expected, I have been forced to the conclusion that the case in hand not being among those contemplated and provided for by the statute of 1877, I had derived no authority from that act to take cognizance of it, and have therefore declined to hold a view in the legal sense of the phrase.

For instance, one morning a police officer requested me to give immediate attention to a case which had occurred five miles away, in the district of Medical Examiner ——, then absent. At much personal inconvenience I responded to the summons without delay. I found in the custody of the undertaker the body of an elderly man, who, early in the day, while in company with a friend, had died suddenly in the street. Careful interrogation failed to discover any suspicion that the death was not a natural one, and also elicited the statement that the deceased had recently consulted a neighboring physician. The fact that the death had been both public and sudden was assigned as the only reason for calling a medical examiner. Yet a little reflection will satisfy all that neither of these features in that case could be considered *per se* as proof of "death by violence." Sudden deaths

*Read before the Massachusetts Medico-Legal Society.

from natural causes are unquestioned, although their frequency has not yet been exactly determined. Their origin and relations form a subject which deserves a full elucidation before the Society. Public deaths are not likely to be unnatural ones unless they occur under circumstances which plainly show their violent character. There can be no doubt as to the nature of the fatal results that follow a social disturbance, which may exist in any and all degrees, from a simple individual assault to a riot of the largest proportions. There is no difference of opinion as to the kind of death which overtakes the victims of a disaster or awaits those who lose their lives through that agency which, with a careless freedom of language, we are accustomed to speak of as accident.

To return to the point whence this digression started, I sought the physician who had attended the deceased. On the demand of the instant he could not furnish the information I desired. He promised to investigate and report; in a very short time he wrote to me as follows: "Mr. —— had a marked stenosis of the mitral valve; was moderately comfortable with care. I learn that he had been drinking hard a day or two preceding his death." Such evidence as this fully confirmed me as to the correctness of the conclusion at which I had arrived, and upon which I had acted, when, in the presence of the dead body, I had expressed the opinion that the case did not come within the province of the medical examiner. There was no duty prescribed by law that I could perform, there was no service that I was qualified to render, and, rendering none, I considered myself entitled to no compensation, and have never claimed any.

An answer to the question which forms our subject must be obtained from a careful study of the law, of which the seventh section is as follows: "Medical examiners shall make examinations as hereinafter provided upon the view of such *persons** *only* as are *supposed* to have come to their death by *violence*."

What is a death from violence within the meaning of the statute? In a general statement it is one with the causation of which human agency is connected directly or indirectly; through default of a reasonable and necessary precaution; through neg-

*The *italics* form no part of the original law.

lect to secure protection against danger known to exist or to be incurred; through force, mental, mechanical, medicinal, chemical or toxic, exercised and applied either ignorantly and unconsciously, or under the impulse of excitement, without premeditation or with deliberation and improper purpose. The definition requires some explanation and limitation, and will be better understood if we constantly bear in mind the fact that the high function of the medical examiner is to assist in the detection of *crime against life*. But the location of the line which separates guilt from innocence is fixed by the provisions of statute law. Violence of death has no constant relation to legal prohibition and penalty, and is not confined to the unlawful destruction of life. In deference to the necessity and the right of self-defense the shooting of an unprovoked assailant may receive no sentence of condemnation. Yet such a death must primarily be treated as a violent one, for the true character of the deed can be determined by judicial inquiry alone, and exoneration is attained only with the verdict which concludes the inquest. On the other hand, death by violence cannot be held to include such human agency as that, for instance, which in the form of parental indiscretion has contributed so freely to the mortality of infants. Neither can it mean those deaths which, also traced to a similar origin through what some one might have done but has failed to do in a preventive sense, are often sudden, always premature, accidental as we call them. The child who, for want of attention, is allowed to be drowned in a cistern or scalded to death in a vessel of hot water; the boy who in his carelessness falls from a tree and breaks his neck; the laborer who in perfect health and in pursuit of his daily work receives a heavy blow upon the abdomen and three days latter suddenly passes into a collapse from which he never rallies; the man of business who with hasty and ungarded steps collides with a post in the street and sustains injuries which are ultimately fatal; the victim of melancholy who wanders from home and is lost, and whose remains are found months afterwards with everything untouched except by the process of decay; those who perish by the unmistakable consequences of great natural commotions, such as thunder-storms and tornadoes; not one of these furnishes an example of death by

violence in the medical examiner sense; no one of them dies by the method provided in the easy and uninterrupted order of nature; but on the other hand they do not die through an unlawful course of action on the part of any person.

"Supposed to have come to their death by violence." The word "supposed" imparts a degree of elasticity to the section, and without being intended to exclude those cases which derive a known character from obvious violence, enables it to cover a field the contents of which, as being unexplored, would otherwise be uncertain; and in which either the rights of good personal reputation or the demands of justice require that doubts should be replaced with facts. The term in question seems, at first sight, to be a vague one; it implies a mental process, but carries no reference to the conditions which shall render that process a sound and valid one. We must believe that the word is intended to mean the average opinion of intelligent minds whose conclusions, unmixed with the elements of credulity and timidity, represent the preponderance of well-considered testimony. In addition to this, violence may reasonably be "supposed" in those cases which, though not presenting *prima facie* a suspicious aspect, cannot be proved by a very large probability to fall within the range of the operation of the natural causes of death. Whenever violence is not self-evident but only supposed, it is the duty of the medical examiner, before taking any action, to assure himself that the theory of illegal force commands a plausible support. His position is not a judicial one, yet his decisions may be final. He must judge of the applicability of the law to the case in hand. He must exercise that discretion which takes precedence of learning in the enumeration of qualities which determine the selection of candidates for office. Thus will he aid in establishing those principles upon which must be based every rule of official action, and in teaching the public to understand and accept those distinctions which are of fundamental importance, and which cannot be neglected without endangering his own integrity and dignity, and doing injury to the cause of law and order.

(*Concluded in April Number.*)

NO BACTERIA IN DIPHTHERIA.—(*The Medical Record*, Vol. XXI, p. 150). Dr. R. R. Gregg calls attention to the following facts in regard to diphtheria, and, as he thinks, general misinterretations:

First,—"There is not the slightest difference to be found recorded by the best observers, between the three classified forms of so-called bacteria in diphtheria, namely: spherical, rod-like and spiral, and the three exactly corresponding forms of coagulating fibrin, namely: granular, thread-like and spiral"

Second,—Where blood congests, there fibrin soon commences to coagulate, first into granules; then these join to form fibrils, and later spirals, unless prevented by the attachment of their ends. Lehmann, in speaking of coagulation, says: "The same process goes on in the vessels of the living organism as soon as the blood ceases to circulate." And Wood, in his "Practice of Medicine," says, when speaking of the organization of inflammatory exudates: "As it first escapes it is a homogeneous, transparent fluid, but soon afterward, if examined by a microscope, it is found to contain multitudes of fibrils" and "great numbers of minute granules of different sizes." Thus it appears, according to Lehmann, that in blood which stagnates, as it always does under congestion and inflammation, the fibrin at once begins to coagulate; and according to Wood, under the same circumstances, where observers say their bacteria are found in the greatest abundance, the granules and fibrils of fibrin are found in the greatest profusion. Therefore, "those who claim the presence of bacteria, or vegetable organisms, in the same part where the exactly corresponding forms of fibrin develop rapidly and in great numbers, must show the clearest distinction between these two sets of forms," and the relative proportion of each, or withdraw their claim.

Third,—In diphtheria fibrin is always in excess in the blood, and the false membranes, heart-clots, or thrombi and emboli are formed of it. These cannot be made without first the formation of granules and then the joining of these into threads or rods. Therefore, since these granules and threads must exist in or upon congested and inflamed surfaces, when the corresponding forms of so-called bacteria begin to develop, there is no necessity

for accounting for the presence of granules, threads or rods by regarding them as vegetable growths or bacteria.

The author also criticises the statement of Prof. H. C. Wood, that "the membrane bears everywhere the appearance of little balls about the size of blood corpuscles, either singly or in groups of four or more. When the blood is examined, the white blood-cells are found to contain these micrococci, moving about to the number of forty or fifty in each cell. By experiment it was found that this infinitesimal plant fastens upon the white corpuscles, and multiplies its cells," changing the interior of the corpuscle until it is destroyed, and finally bursting it, and thus setting loose the plants in an irregular mass. "Thus increased, they poison the blood, choke the vessels, and are found in myriad numbers in the spleen and bone marrow, where the blood is manufactured."

The author claims, from a very careful study of the blood-corpuscles under all circumstances, which study has continued through a period of twenty years, that the micrococci which Prof. Wood observed in the white blood-cells are nothing more nor less than the granules which naturally constitute every such cell; and "the little balls about the size of blood-corpuscles," which were observed in the membrane were simply decolorized red blood-corpuscles, distended and made globular by the suppurative processes. Plates illustrating the granular structure of the white blood-cell can be found in "Lehmann's Physiological Chemistry" and T. B. Lippincott & Co.'s edition of "Virchow's Cellular Pathology." The claim that the micrococci or "granules seize upon and destroy blood-cells would seem to be an imaginary and gratuitous assumption." That the blood-cells burst or "melt down," and release their component granules, is true, because they are dead and undergoing disorganization. Until the granules become putrid they do not poison or destroy other tissues.

No observer has yet pointed out the distinction that exists between the granules formed from disintegrating blood-cells and the granules into which fibrin first coagulates. The author claims that the first "lead to suppurations, and possibly to septicæmia, but *never* to false membranes;" while the latter lead "rapidly and directly on to the organization of false membranes and heart-clots. 'The infinitesimal plant found in myriad numbers in the spleen' by Prof. Wood was unquestionably the granules of disintegrated blood-cells, which are sent to the spleen to be still further disintegrated, preparatory to being cast out of the system through the bowels, as refuse matter. Besides, the blood-globules are not made in the spleen, but by the mesenteric glands, and disintegrated by the spleen and liver at the close of their life, whether of old age or disease."

SOCIETY MEETINGS.

Chicago Medical Society—Mondays, March 6 and 20.
Chicago Pathological Society—Monday, March 13.
Biological Society—Wednesday, March 4.

CLINICS.

MONDAY.

Eye and Ear Infirmary—1.15 p. m., Otological, by Prof. Jones; 2.15 p. m., Ophthalmological, by Prof. Hotz.
Mercy Hospital—2 p. m., Medical, Profs. Hollister and Quine.
Woman's Medical College—2 p. m., Dermatological and Venereal, by Prof. Maynard; 3 p. m., Diseases of the Chest, Prof. Ingals.

TUESDAY.

Rush Medical College—3 p. m., Dermatological and Venereal, by Prof. Hyde.
Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.
Mercy Hospital—2 p. m., Surgical Clinic, by Prof. Andrews.

WEDNESDAY.

Chicago Medical College—2 p. m., Eye and Ear, by Prof. Jones.
Rush Medical College—2 p. m., Medical, by Dr. Bridge; 3 p. m., Ophthalmological and Otological, by Prof. Holmes; 3:30 to 4:30 p. m., Diseases of the Chest, by Dr. E. Fletcher Ingals.
Eye and Ear Infirmary—2.30 p. m., Dr. E. J. Gardiner.

THURSDAY.

Chicago Medical College—2 p. m., Gynæcological, Prof. Jenks.
Rush Medical College—2 p. m., Diseases of Children, by Dr. Knox; 3 p. m., Diseases of the Nervous System, by Prof. Lyman.
Eye and Ear Infirmary—2 p. m., Ophthalmological, by Dr. Hotz.
Woman's Medical College—3 p. m., Surgical, by Prof. Owens.

FRIDAY.

Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.
Mercy Hospital—2 p. m., Medical, by Prof. Davis.

SATURDAY.

Rush Medical College—2 p. m., Surgical, by Prof. Gunn; 3 p. m., Orthopœdic, by Prof. Owens.
Mercy Hospital—2 p. m., Surgical Clinic, by Prof. Andrews.
Chicago Medical College—3 p. m., Neurological, Prof. Jewell.
Woman's Medical College—11 a. m., Ophthalmological, by Prof. Montgomery; 2 p. m., Gynæcological, by Prof. Fitch.
Daily Clinics, from 2 to 4 p. m., at the Central Free Dispensary, and at the South Side Dispensary.